# FROM CHINA TO HKAMTI LONG

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Bullock Transport, Western Yunnan.

# FROM CHINA TO HKAMTI LONG

BY

CAPTAIN F. KINGDON WARD

Author of "The Romance of Plant Hunting,"
"The Mystery Rivers of Tibet," etc.

EXPLORERS CLUB

ILLUSTRATED

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# PREFACE

MY object in this book is to give some idea of the rapid changes which take place—physical, climatic, and botanical —as you travel westwards from the Yangtze across that narrow strip of earth's crust where the great rivers of South-east Asia escape from Tibet; and of the jungles which hide the headwaters of the mighty Irrawaddy, Burma's river.

One cannot, however, start a travel book in the heart of Asia. No magic carpet has transported us there. Consequently, I have devoted the first two chapters to the business of getting to our starting-point, which is the city of Likiang. This journey from Likiang northwards, and subsequently westwards to Hkamti Long, occupied me from July to December, 1922. Between February, 1922, when I crossed the Burma frontier, and July, 1922, when I left Likiang, I was engaged in botanical exploration in the Tibetan Marches. My route was an old one, more or less familiar.

Starting from Bhamo, I travelled via Tengyueh and Tali to Likiang, and thence to Yungning. From this last place I went on to Muli, returning to Yungning and Likiang towards the end of July.

This Muli country, however, I had already visited in 1921—sufficient excuse, if excuse were needed, for going there again in 1922. *The Romance of*

*Plant Hunting* was inspired by its forbidding cliffs and raw screes. But the journey thither was then skipped; so eager was I to get to the flowers that, having embarked my readers on the Burma frontier, I launched them forthwith on a voyage through uncharted seas of flowers. But the subject was always the seas themselves, not the voyage; only here and there was a lighthouse sighted, which might give us our geographical position.

Nevertheless, that journey from Lashio, in Burma, to Yungning, which I made in 1921, is green in my memory; and rather than neglect it altogether, I have made it the gambit for this travel story.

If, then, the reader will realize that Chapters I and II actually deal with the route followed in April and May, 1921, to the same destination—namely, Yungning—as that followed in March and April, 1922, by a more familiar route; and that Chapters III to the end deal in sequence with the actual journey of 1922, I shall be absolved from any accusation of false representation.

Funds for the journey were obtained by means of grants given by the Royal Society and by the Committee of the Percy Sladen Memorial Fund. It is hoped that the results achieved are not disproportionate to the high ideals of research which animate the members of those committees, nor to the actual cost of the expedition.

My thanks are due to many friends for assistance, particularly to Pères Goré, Ouvrard, André and Genêstier of the Mission Etranger; and, in Burma, to Mr. J. T. O. Barnard, C.I.E., Captain Gatherer, M.C., and Captain A. S. M. Cousins. My thanks are due also to Mr. P. M. R. Leonard and to the late

Mr. T. Hare for several of the photographs. To my wife I owe an especial debt for correcting the proofs and compiling the index—an uncongenial task, to escape which I have fled back into the cold heart of Asia.

F. K. W.

*London,* 1924.

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# FROM CHINA TO HKAMTI LONG

## I. FROM LASHIO TO THE KUNLONG FERRY

IF you step ashore into the blistering glare of Rangoon in mid-March only to exchange the swelter of Lower Burma for the heat and dust of Mandalay, you will be thankful, as I was, for that early train which in the dewy dawn leaves the old capital for the Shan Plateau. You can see where it rises there, across the shimmering plain, like an old sea-cliff. There, at any rate, you will be above the dust; above the lowest strata of the heat too.

Can the train possibly climb that barricade, you wonder! It does. On the fringes of the plain, intersected with irrigation canals and speckled with the grey-green, gnarled acacia trees, the train halts. Two more fussy engines are hitched on to us—an extra one in front, and another to push behind, and pull too, when its time comes; then with defiant snortings and much puffing and blowing we start up the cliff on a long slant. To and fro the little train runs, halting only to reverse, as it climbs the grade alternately to left and right.

At last we reach the summit of the plateau, and skate easily down the long inclines, and up again, always in the elfin wood, 3,000 feet above sea-level.

Now and again this dim forest is coloured by clouds of *Bauhinia variegata*, in full lilac bloom, and rumpled purple waves of *Congea tomentosa* cascading from aloft. In the warm, bronzed Burmese sunset this last takes on an indescribable tint of fiery apricot, as luminous as a rising harvest moon.

Passing the hill-station and sanatorium of Maymyo, where in the bazaar you may see baskets full of blue *Vanda cœrulea*, we writhe downhill to the Gokteik viaduct. Long before we get there, however, we can look out of the window and see the gorge with the white viaduct, like a spider's web strung across, far below. By what miracle can the train ever crawl down that cliff? To and fro it goes, passing and repassing the viaduct, which is now far ahead, now as far astern; down, down, till at last we draw up at the little wayside station of Gokteik, and the bridge-head yawns in front.

This was too good to miss, and I broke my journey at Gokteik for the night, in order to see the caves.

Out goes the train, crawling now very slowly, feeling its fearful way across the great steel structure, and so up the cliff opposite, to and fro again like a shuttle, till it is lost in the forest. The whistle of a down-coming train is heard, drawn and thin in the distance. It dies away. Presently it breaks out again, louder now, nearer . . . only to grow fainter and fainter, and cease suddenly. When for the third time it bursts upon the ear, loud and long and minatory, the train is entering the narrow viaduct.

So I went up to the bungalow on the bluff, overlooking the gorge, and after tea prepared to descend by the steep path to the river.

The river flows through a natural limestone tunnel,

the viaduct standing on the tunnel roof. The thickness of the arch in the middle is about 350 feet, and the height of the cave at this point is about 150 feet ; thus the middle trestles, themselves 300 feet high, rest on very solid foundations.

In the cool of the evening I scrambled down the wooded cliff to the stream, and so from boulder to boulder, to the cave entrance. Water splashed and dripped and trickled into a hundred pools. Grains of sand, flooring the quieter puddles, had been coated with lime, film on film, hard and smooth, and round. Pearls they looked like—poor man's pearls. Sticks and leaves, too, were crusted with stone, presently to become but brittle masks. The water was as clear and clean and limpid as glass ; yet everything it touched was slowly frozen, and changed to monstrous form with a heart of stone. A forest of spires, glazed with green tiles of moss and fern, guarded the entrance to the cave. They had grown up inch by inch in response to the everlasting drip, and they were, maybe, as old as the Pyramids ; but they were still growing, which the Pyramids are not.

Behind that barricade vegetation ceased. All was in darkness, after the glare outside. Looking back through the dripping, stone-curtained entrance, with its clusters of cones sticking up like teeth, you saw the cliffs of the gorge towering up to a strip of blue sky, and the river beating itself into suds against the rocks.

Presently my eyes grow accustomed to the gloom, and I can distinguish something of my surroundings. Fantastic fungi sprout almost to the roof, great smooth terraces, piled slab on slab, or

outspread like lava ; overlapping cups, with wavy outline, and crimped lip ; cones and pulpits ; and everything carpeted with a soft earthy bran, derived from the myriads of bats and swallows which have lived for thousands of years up in the invisible belfry above. With footfall now smothered in the mould, now ringing on the bell-like stone, I climbed from terrace to terrace, from slab to slab, balancing on the rim of an invisible, bottomless pool, or crawling along a ledge. Below me boomed the river, and the swirl of the water echoed from wall to wall. Thousands of bats patched the roof, and uttered piercing squeaks. At last the platforms ceased, and the river filled the whole cavern. It was impossible to proceed, but I could see daylight at the far end of the tunnel, at no great distance. The outlines of the cones, and the coral basins, seen through a mist-bath, against the fading daylight, with the trees anchored to the cliff beyond, were unforgettable.

A big double-cylindered engine hauls the train on from the trestle bridge. To and fro, up the cliff it climbs, while amazing segments of the line peep out through the trees. Then we slide down the long inclines once more, and heel over as the line banks on the wide curves, then rock back, and over again as it straightens out ; we snore through cuttings, crawl uphill, and spin along on the level. At last, as the sun sinks behind the mountains like a globe of molten metal, we reach Lashio, terminus of the Northern Shan States Railway, distant 561 miles from Rangoon.

Beyond Lashio are rolling hills covered with scrub jungle, and open downs covered with scorched

grass. A few scattered pine trees adorn the dusty links.

On April 11, 1921, we set out for China. It was a hot day, with a sultry breeze, and the dust rose like smoke from the hoofs of the mules, and trailed out behind the caravan. Tedious bullock-carts, driven by Shan men sitting cross-legged on the shaft (with whole families asleep beneath the tilt), blocked the road and raised more dust. But we soon reached the limit of cart transport. Up on the treeless downs everything was singed to a juiceless brown; but down by the river were poor little Shan villages, half hidden behind a screen of bamboo. The contrast between the malachite green of the foliage and the grey-blue distant hills of China, under a lowering sky, was beautiful. At dusk a breeze sets in, and the bells in the village temple tinkle dreamily; and at dawn the brain-fever bird calls and calls, to tell you that the hot weather has come.

Amongst noticeable trees and shrubs are species of oak, Ficus, Cassia, Bombax (cotton tree), and Schima; the last-named frequently upwards of 80 feet high, certainly amongst the biggest trees met with. Common, too, is a Dalbergia, now in flower. Many of the trees are gay with bunches of Loranthus, or with mistletoe itself. Of smaller trees and shrubs mention may be made of a Rhamnus with rather sallow flowers; Englehardtia, its twigs just fledged with pale silken green, and hung with innumerable swinging tassels of leafy fruit; a Clerodendron with fragrant chalk-white flowers, whose long exserted stamens resemble antennæ, and give to the flower an insect-like appearance; a species of Capparis; a

scraggy, loose-limbed Buddleia, with uninteresting white flowers; and, most enchanting of all, an arborescent Composite, scenting the air for yards around, and palpitating with gorgeous butterflies, attracted, not by the colour of the flowers, which are white and aggregated into small capitula, but by their fragrance and honey.

There are many climbing plants also—a ragged Acacia, its little spheres of coral-red buds just bursting into a froth of white stamens; Hiptage, smothered in snow-white blossom; and the boisterous Ventilago, loosing flights of spinning fruits. This extravagant liana frequently smothers the tree over which it sprawls, thereby killing it.

There is a fine bamboo, growing in dense clumps and reaching a height of 80 feet. The stems are smooth, polished, bright gamboge, striped at each joint with jade green.

On the 14th we climbed more steeply, and soon found ourselves in a small grassy valley. A high, rugged range—the Salween divide—flanked it on the right, and mountains enveloped us. We camped close to where a small stream had gone to earth beneath big limestone clinkers. Along both banks of the dry bed, and particularly on the cankered boulders themselves, were masses of *Primula malacoides*. This form of it bore rose-pink flowers with bright yellow eye, distilling a fragrance of primroses. Well-grown plants, living in the shade, sent up fifteen flowering stems, each carrying eight to twelve tiers of bloom. Starveling plants grown in the open, on the other hand, might be only an inch or two high, with a single whorl of flowers—or even a single flower! The plant was extraordinarily abun-

dant, but only over a small area, and was almost confined to the dry ditch, though a few scattered plants were noted in an open bog.

I secured abundant seed of the plant (K.W. 4793), which, after flowering throughout the winter, was now seeding heavily. It proved, however, to be only a form of *P. malacoides*—a sweet form, certainly, with its fragile fragrance, like that of dewy primroses in a copse, shy and alluring, its whorls of silver-crusted cups, and rosettes of sea-green foliage ; but interesting because not previously recorded from this region. It is a far cry from Tali, the home of *P. malacoides*, to Möng Yaw, in the Northern Shan States ; though, to be sure, my version of it turned up a few days later, on the other side of the Salween.

The plateau country through which we were travelling is composed almost entirely of limestone, giving rise to a rust-red soil, and to typical scenery, with escarpments and caves and underground waters. One remarkable result is the formation of sinter terraces in the abundant streams. In one stream, overshadowed by magnificent horse-chestnut trees in full bloom, there were scores of these step terraces, forming natural weirs, each terrace ending in a ledge over which the water pours ; a deep pool forms under each fall, but the water shoals gradually to the next weir. In fact, several of the terraces were high and dry, and overgrown with bushes. Each terrace has a wavy outline, with hollow tongues projecting down-stream ; and each tends to work up-stream, as the lip is worn away, and more sinter is deposited in the shallows behind.

The origin of these terraces is obscure. The

heat of the sun alone would tend to deposit lime in solution ; but they are especially formed in those streams which are overshadowed by trees, and therefore coldest. Hence it seems probable that acids derived from decaying vegetation precipitate the lime.

On the second day out from Lashio my muleteer came to me with a long face ' Sir,' he said, ' two of the mules have strayed. We cannot find them. Please, sir, rest here a day while my assistant goes back to Lashio to seek them.'

So we rested a day, and in the evening the muleteer came, and there were still no mules. ' We must go on to-morrow,' I said. The season was already far advanced. At least we must cross the Salween, and get well away to the east before the rains came.

One load was carried by my riding mule, and henceforward I went on foot. The other loads were rearranged, and the extra weight distributed amongst them. Thus we proceeded, while one of the men stayed behind to prosecute the search. We had no doubt the missing animals would be recovered in the course of a day ; they had strayed in the night, during a fierce thunderstorm, that was all. Anyhow, there was no time to return to Lashio and engage more. Nearly all the mules had left at the beginning of the hot weather, and I had had much ado to engage these.

One evening when we were in camp, three days later, I suddenly heard the man who had been left behind to search talking with his companions. I could not hear exactly what had happened, but, to judge by the virulence of his oaths, no good

thing. I judged the mules were lost beyond recovery—and so it proved. The prospect of walking to Tali did not much intrigue me.

That night my servant—a Chinaman I had picked up in the bazaar at Lashio—came to me menacingly.

'Mister, I want a 50-per-cent. increase of wages, otherwise I go back now.'

He got it—but I was a fool to give in. I should have kicked him out and taken the consequences. A few nights later, when we were safely across the Salween, he forced one of my boxes while I was asleep, stole twenty pounds worth of silver, and absconded. I never saw him again.

However, these were, after all, minor troubles, though annoying. They loomed large then, because I was pressed for time, and we were struggling across-country in the hot weather, which saps the strength and frays the temper. It was abominably hot, and there was a fierce drought in Yunnan all through April, May, and early June. It was the year of the great heat in England.

The country here is thinly populated, with small Shan villages in the valleys, Maru villages on the hill-tops. Every one is miserably poor, and this state of things continues far into Yunnan. The poverty is no doubt largely the result of this limestone formation, which weathers to a stiff clayey soil, difficult to work. The underground drainage, too, is inimical to cultivation except in the lower valleys, and the hills, though well wooded, are steep, and frequently broken by escarpments. Many of the hill-tops are capped by clay, and the rain slides off them like water from a duck's back. Here there is no forest, only grass.

The ascent to the summit of the Salween divide is gradual, the descent abrupt. Besides the horse-chestnuts leaning over the stream—which had a very English appearance, so completely have we adopted the horse-chestnut—there were alder, Magnolia, oak, chestnut, and many other trees; but not a single Rhododendron did I observe, even as high as 5,000 feet. Still, I have no doubt there are some higher up, the peaks rising to as much as 7,000 feet sheer above the river.

The Salween is a mighty stream, flowing swiftly between high sandbanks covered with thick jungle. There are not many places where one can cross it, and the ferry-boat has no doubt plied backwards and forwards at this point for several centuries. Mules are taken over in a barge, while passengers cross on a raft made of two canoes lashed together and decked over. I saw a Chow dog swim across too; he was carried about 150 yards down-stream in the course of his 500 yards swim.

A glutinous heat pervaded the valley, but daily thunderstorms, accompanied by high winds and hail, would swoop out of a clear sky.

The trees were draped with great numbers of orchids, some of them in flower. There was a striking Dendrobium, with cream petals round an orange labellum; another with purple and cream flowers; a third, intense orange, with a black band across the labellum.

This route from Lashio to the Kunlong ferry, and thence on to Tali, has been surveyed for a railway line. The line would not come over the high range we had just crossed, but round it, following the valley of a river which enters the Salween some

miles below the ferry, thence following the right bank to Kunlong. Though it might be impossible to bridge the Salween at this point, that would not matter.

Almost immediately opposite the ferry, the Nam Ting enters on the left bank, and up the valley of the Nam Ting the line would be prolonged into Yunnan. That, at any rate, was the idea—to extend the Shan States Railway to Tali. From Tali it might be possible to reach the Yangtze, it was thought. So doubtless it might, though, as the Yangtze is not navigable here, nor for several hundred miles, through communication by rail and boat between Rangoon and Chungking would still be to seek.

The only criticism I have to make is that between Lashio and Yünchow the line passes through some of the poorest and most desolate country I have ever seen in Yunnan.

However, though doubtless such a railway presents no insuperable difficulty, it is not likely ever to be built now. The need for it is on the wane.

After crossing the Salween, we proceeded up the valley of the Nam Ting, and presently crossed the China frontier, though there was nothing to show that we had done so.

We were just breaking camp next morning—it was April 22—when an armed caravan hove in sight. The owner was a Chinese merchant, returning to his home in Shunning from Lashio, whither he had been to purchase foreign cloth in the bazaar. It was his annual stock renewal. A dozen mules, guarded by hirelings with muskets, carried his purchases. The merchant himself, and two of his

staff, rode mules. Seeing me on foot, he courteously offered me a spare riding mule, which I was thankful to accept; and for the next three or four days, during which time we managed to keep up with the fast-travelling native caravan, I was able to ride a few miles each day.

The merchant informed me that the road was infested with brigands. Hence the escort. He himself carried a very rusty automatic pistol. A few days ago a caravan had been held up close to where I had camped, and only a few miles from the Burma frontier.

The road up the left bank of the Nam Ting leads to a city called Yünchow, and this is the proposed route of the railway. We, however, did not cross the Nam Ting, but turned away from the valley, travelling more northward, and making straight for Shunning.

## II. THROUGH THE HEART OF YUNNAN

MY chief object was to put as great a distance between myself and the Salween Valley in as short a time as possible. The flora there is tropical, and I was looking for hardy stuff. Still, it was interesting to trace the Indo-Malayan plants far into the heart of Yunnan, but growing fewer and fewer as we proceeded.

Leaving the flat valley of the Nam Ting, we turned north, and, crossing a low limestone range, came into hill-country, pleasantly wooded with oak. There was quite a good stone-paved road up the valley, and it was clear that in the old days, long before the railway was built to Lashio, much traffic passed this way going to the mines.

On the following day, April 23, 1921, I made my first serious plant-hunting trip during the midday halt. I climbed to the summit of the limestone ridge which separated us from the valley of the Nam Ting. On this side the range was wooded with oak and chestnut. Near the top were small rhododendron trees in full bloom,—the ground was strewn with their fallen corollas. This was *Rh. ciliicalyx* perhaps, one of the Maddeni species certainly—a bush or small tree with loose trusses of fragrant white flowers.

More interesting still were two plants found

growing on the piled-up limestone rocks under the mossclad trees, a Petrocosmea and a Primula. The former, a new species, has been called *Petrocosmea Wardii*. The latter was in fruit, but unfortunately the seeds were not ripe.

Looking over the cliff, I saw the Nam Ting winding through a stony valley 3,000 feet below. In the afternoon we walked into a trap, and were ambuscaded by bees. The bees were extremely active, and attacked the middle of the line with such vim that half the mules stampeded ahead and half fled back. The Shan dogs (which resemble Chows) bolted through the undergrowth, combing themselves in the bushes and rubbing their heads in the soil,—but they did not utter a sound. Altogether a lively five minutes. Eventually we shook off our assailants, and reformed line ahead.

These Shan dogs are much used in Southern Yunnan for guarding the caravans. Though no cowards, they are evil-tempered brutes, and I have been attacked by them in broad daylight, when walking harmlessly past a caravan halted by the roadside.

For the next three days we followed a badly aligned road through picturesque but not thrilling scenery. Those villages which we passed through, or saw, were mean and dirty, with dilapidated temples and miserable inns. Often we preferred to camp—or had to. The people we met were mostly Shans; a few were Chinese from the overflowing province of Szechwan.

Thickets of Zisyphus, Capparis, Cæsalpinia, Hiptage, and a very woolly-leafed Buddleia; stunted Englehardtia, Acacia, Schima and Euonymus trees;

Shan Women, Hkamti Long.

climbing Tripterygium; and several species of fig, evidently planted, near shrines and villages, were met with. Day by day Indo-Malayan plants decreased in number, while Chinese plants were ever on the increase, till, on the seventh day after leaving the Salween, we found the mountains clothed with the Yunnan pine.

When we came to the pine-woods we met with the cheeky black-and-white magpie once more; and jungle fowl swarmed in the thickets wherever bamboo filled up the spaces between the trees; the forest was alive with them almost as far east as Shunning.

The first seven stages from Kunlong are as follows:

1. To Shan hut by the Nam Ting. Through forest all the way. Eight miles.

2. To camp in cultivated fields by the Nam Ting, near a small village, where the valley widens. Thirteen miles.

3. Cross a range of hills to Hsiao-mong-sa, a Shan-Chinese village, in a valley to the north of the Nam Ting. Native inn. Twelve miles.

4. To Hsai-hkan, and camp in the paddy-fields. Twelve miles.

5. To Pi-pa-shui, a village of only two houses, so we camp in the paddy-fields beyond Chi-mong-kow, and two miles from Tashan, the latter a largish village further down the valley. The country here is more thickly populated, and we pass through two other villages, Kang-chu-yueh and Cha-pu. Fifteen miles.

6. To village of Chen-kang, and take refuge in a broken-down temple. Fourteen miles.

7. To village of Ya-ling, via Meng-ti, and put up in a temple. Sixteen miles.

We spent several days crossing the heads of valleys which discharged into the Nam Ting, our general direction still north-east. Then came the typical Yunnan travel when marching counter to the main ranges; that is to say, up over a lofty spur, down into a deep trough, cross the stream, and over the next range. For eight days after leaving the Salween we keep within its basin; but we soon put several ranges of mountains between us and it, so that the Indo-Malayan vegetation rapidly grew more and more impoverished. Still, there were many shrubs, such as Luculia, Osbeckia, Vernonia, and large-leafed Araliaceæ, to remind us that the Salween Valley was, after all, not so far behind.

In many of the valleys *Primula malacoides* was as common as buttercups are in an English meadow.

On April 27 we reached Yingpan-kai, which, as its name suggests, really is mildly fortified with a ditch and a ramp. It boasts a number of tiled houses, a school (in the temple), and a yamen, but no magistrate. A few days later we arrived at a village and were installed in the new schoolhouse. It was complete with class-rooms, desks, blackboards—everything which a modern academy for young gentlemen should possess, save one; there was no schoolmaster. Consequently the attendance was negligible.

I rubbed my eyes next morning when I saw the broad road contoured round the flank of a range to turn a spur. It was the best I had ever seen in Yunnan—but could this be Yunnan? Most roads in Western China take every mountain by frontal

attack, and no nonsense. Yet here was a fine mule road, almost broad enough for a cart road, though, to be sure, some of the gradients were steep.

Nevertheless, it is a fact that the road between Shunning, or even Menghua, and the Kunlong ferry, is exceptionally good. Much of it is new, only recently traced along a new alignment. 'Why,' I asked myself, 'such a particularly good road here?—in a country notorious for its abominable communications!' There had been a caravan road in the old days—we had on several occasions seen fragments of it; presumably it had been an important highway when the Chinese worked the silver-mines near Lashio. But the Chinese had long since abandoned the mines—they were only surface workings in those days; and the Burma Corporation had long been driving shafts through the hill and scientifically treating the old workings, so that they recovered from the slag-heaps alone more silver than the Chinese had extracted from the original ore!

One day we passed through an open-air market, where, at a wayside temple, were gathered together Shans and Chinese from the scattered homesteads all over the country-side. Naturally so strange-looking an object as myself came in for a good deal of chaff, speculation, and criticism. Said one yokel to another, in a loud whisper, with a glance at me: 'He must be sixty years old, at least. Look at his beard.'

On the ninth day from Kunlong, after passing through forests of magnificent pine trees—some of the pines were of immense size—we crossed another big divide at an altitude of about 8,000 feet. This range may be regarded as forming part of the

dividing-line between the Indo-Malayan flora to the west and the Chinese flora to the east.

Several trees here impressed themselves sharply on my memory, none more than the following: birch, cherry, lime, and one of the blood-red 'Arboreum' Rhododendrons—*Rh. Delavayi*, without the black honey glands of that species. This last was a gnarled tree, or even a shrub, 10 to 20 feet high; some specimens were in flower, others in fruit, and I collected seed under the number K.W. 3784. The white-flowered *Rh. ciliicalyx*, with its four-flowered trusses lolling amongst the bronzed leaves, was also fairly abundant.

On April 30 we stood above a broader, cultivated valley, and saw at our feet the grey white city of Shunning. Descending once more, we rode through flowery lanes to a mean hostelry, for though a district capital, Shunning is a small and poor city, with little trade. Tea is cultivated on the surrounding hills, but there is no other industry.

The last four stages to Shunning are as follows:

8. Across the valley called Hsi-la-pa-tzu. There is a village called Lao-kai near here. Then up the next range to Yingpan-kai. Twelve miles.

9. Cross range and descend to valley; then long climb over the next divide, to a village on the far side. Twelve miles.

10. Cross another valley and range to village of Hsui-kai, where we put up in the village schoolhouse. Ten miles.

11. Cross the last range, and descend to Shunning in a broad, cultivated valley. Ten miles.

Thus from the Kunlong ferry to Shunning is eleven stages, aggregating about 135 miles. Shunning is

therefore, roughly, 120 miles from the Burma frontier, as the road goes. Whether it would not be simpler to make a road up the Nam Ting Valley—the route of the proposed railway—instead of plunging into the mountains, in an endeavour to find a bee-line, is another matter.

Shunning is not an imposing city. You can walk round it by the city wall in half an hour. There are few shops, and poor ones at that. But there are plenty of soldiers. Not aggressive ones—I do not mean that! The Chinese are credited with acting up to the maxim that prevention is better than cure. They pay—so it is said—their doctors so long as they are well, their lawyers so long as they are not engaged in litigation; and, by the same token, their soldiers so long as they are not involved in war. As a matter of fact, the latter, for the most part, do not get paid at all. The inference is obvious.

On May 2 we set out for Tali, travelling not by Yünchow, but bearing north-north-east from Shunning.

Crossing a high range, we saw the Mekong in its stony trench, far below us. The mountains were covered with a thick growth of trees and shrubs, including species of Enkianthus, *Rhododendron Delavayi*, alder, oak, Hydrangea, and a lovely Rhododendron with peculiarly beaked capsules, and very fragrant white flowers splashed with yellow. So odd was the capsule that at first sight I doubted whether it could be a Rhododendron at all, though the leaves looked suspiciously like. Presently I found a specimen in full, glorious bloom, and all doubt vanished. It formed a fair-sized bush, 10 or 12 feet high and half as much through, in the

crumbling granite grit, surrounded by shrubs and trees. I coaxed a little seed out of the old capsules —K.W. 3801 is its ticket. After that excitement there was a considerable lull till the Mekong, and the Bridge of the Green Dragon, lay behind us.

The Bridge of the Green Dragon is a fine structure, and, curiously enough, is in perfect repair, thereby matching the excellence of the road. There is not (or was not at the time of which I write) a floor-board broken or loose, a link of the twenty support chains missing.

The next range was well wooded, and the May sunshine had coaxed many flowers into bloom ; thus the thickets were vivid with a foam of pink Deutzia, roses, white syringa (Philadelphus), *Rhododendron decorum* (K.W. 3805), and yellow jasmine.

On May 5 we reached the Yang-pi River, a tributary of the Mekong, and were ferried over on a bamboo raft. The heat was intense, and anything more withered and grim than the scanty vegetation in the furnace of that gorge I have no desire to see. The mules swam across in a body. Mules are good, but reluctant, swimmers, and they take a deal of persuading. They got it. The Yang-pi River is about 50 yards wide, very deep and tranquil. At high water it is nearer 80 yards wide. Below this point it enters a profound and twisted gorge.

The pine trees (*Pinus yunnanensis*), as though writhing under the torture of thirst, grow in a cork-screw. *Pinus Armandi*, a little higher up, does not appear to suffer. In the pine forest I found a Magnolia not yet in bloom.

After crossing the river, we marched to a temple perched up on a limestone cliff, lapped by a sea of

forest. The country, though less sparsely populated than the Chinese Shan States, was still for the most part wooded, and very little cultivated. *Pinus Armandi* covered the loftier ridges, which were so steep that even the most patient agriculturists could scarce wring a living from the soil. But if the landscape was barren of man's conquest of Nature, it was at any rate enlivened by Nature herself. There were flowers everywhere.

On the open shaly slopes—we had temporarily quitted the limestone—were low-growing bushes of Cotoneaster and sweet-scented Pyrus ; hedges full of roses and barberry ; in the woods, blue milkwort, spurge, and Salvia ; in the marshes, *Primula polyphylla*, easily recognizable, though over. Scarcely a day passed when we did not see the mauve and silver of *P. malacoides*.

On May 7 we crossed another range, and descended into a more populous valley, at the sources of the Red River. There is no bridge here, because there is no visible river ; lack of water is one of the troubles of Menghua in the dry weather. But the plain is well cultivated nevertheless. We picked our way amongst a maze of market gardens, crossed a backwater by a mud-bund, climbed on to a terrace—and that was all we saw of the Red River. The city of Menghua, protected by a remarkably good wall, faced us. A guardian pagoda crowns a cliff to the south, where the streams from the valley unite to form the Red River, which starts its career by plunging into a gorge. The seeming prosperity of Menghua is doubtless due to the pagoda's beneficent influence.

It was market day in Menghua, and the streets

were crowded with rosy-cheeked Lolos from the mountains.

From Shunning to Menghua is six stages, as follows :

1. Northwards from Shunning up the valley, and over the divide into the basin of the Mekong, thence down to the village of Hsin-ts'un. A critical day botanically, the flora henceforward being definitely Chinese. Twelve miles.

2. Descend to Mekong gorge, cross by chain suspension bridge, and climb to the small village of Sung-lin-tang, where there is a remarkably good inn. There are interesting trees in the Mekong gorge, including species of Ficus, most of them with polished leathery leaves. The road is more remarkable than good. Twelve miles.

3. Over the Yang-pi divide to A-lu-shih, built on the steep side of a hill. Broken country. Eight miles.

4. To the Yang-pi ferry, steep descent, eight miles. Cross river, and another four miles, to rock temple of Cha-fang-ssu. Twelve miles.

5. To village of Hsi-chu-kai, in a valley. Very undulating country. Fourteen miles.

6. Due east over the divide to Menghua, at the sources of the Red River. Twelve miles.

Two more marches due north brought us to Tali. The sources of the Red River are separated from the Tali plain by a low range of bare, dusty, brick-red hills—which presumably give their name and colour to the river. After the first rains they are spangled with flowers, but at this season, and in this drought, they are hideously naked. Only the sheltered slopes were clad with bushes.

From the summit we saw the lake, and the high peaks above Tali, and the distant hills beyond. It was late when we reached Tali, after marching 18 miles.

It was the 'season of excited insects,' as the Chinese say, when we left Tali; beetles hugged each other in the hedges, butterflies danced on the flowers, flies buzzed. The colours on the plain are clean and wholesome and fresh; lake, sky, clouds, and mountains, all look joyful. We followed a lane between hedges of pink and white roses, rustling willow, barberry, and the sheeny foliage of Elæagnus. In spite of the fields and fields of opium poppy, the ditches filled with Veronica, water buttercup, and Sagittaria recall the 'lodes' in the Fen country.

Sky-blue Cynoglossum and pink catchfly in company look very well, and with them is a rosy-flowered Spiranthes.

At the head of the Tali Lake is a large cavern under the limestone, from which, during the eighth month (September), issue multitudes of fish. So it is said, at any rate. At the time of the full moon a fair is held here—the 'fair of the fish's hall,' and the fish are caught in nets as they come out into the lake. Crowds of people come in boats to catch the fish, and by land to watch.

Crossing the head of the lake by a stone causeway, we marched eastwards, and climbed the red hills which separate it from the basin of the Yangtze. *Primula Beesiana* crimsoned the bogs, but there were few other flowers here.

A long valley led gently down to the Yangtze. It was filled with shrubs, amongst which were many climbing plants, species of Clematis, Vitis, Bryony,

Codonopsis, Lonicera, and a charming Bauhinia in flower.

There are not many villages. Above a place called Hwangkiaping is a high cliff, with a Buddha set in a niche near the summit.

'Men cannot reach it!' said one of the villagers to me solemnly.

'Then how did it get there?' I asked in astonishment.

'It flew there,' broke in one of the muleteers; and every one laughed.

We reached the Yangtze on May 17, and continued a few miles down the right bank to the ferry opposite Kinkiang-kai. The ferry-boat is of the usual type, high in the bows and stern, like a junk. We saw a sampan coming down-stream, boldly shooting the rapids.

After crossing the river we passed up the high street of Kinkiang-kai, which is a small market town, and entered a narrow valley, running almost due north. The lower part of the valley is stony, and rather barren, but from Heiniu-kwang ('the village of the black cow'), as far as the 'lake of the black mist,' it is entirely cultivated, and fairly well populated. The largest villages are Chila, towards the lower end; Chingyu-kai, about half-way up; and Chi-kwang, at the foot of the lake.

But although the valley—which at the bottle neck of Chingyu-kai does not exceed half a mile in width, and nowhere exceeds 2 miles—although the valley is intensely cultivated, with many little villages embowered in trees, the surrounding hills are almost bare of vegetation.

The Heiwu-Hai ('lake of the black mist'), which

Lake Scenery, N.W. Yunnan.

occupies the head of this valley, is about 10 miles in length, by half as many in breadth. It has no visible outlet southwards down the valley; indeed, it owes its existence to the cones of rubble which have been thrown across the path of the stream from either flank, thus ponding back the water at the valley head. But the underlying rock, at any rate, is limestone, so that the water doubtless filters through.

The western mountains rise steeply from the water, and only a few small fishing villages crouch in the deep bays. On the east the hills slope down more gradually to a cultivated terrace which lies just above the lake level. The paddy is irrigated from the lake by means of wooden scoops attached to ropes, which are swung round and round, like a skipping-rope, between two persons. Here villages cluster thickly. The lake also teems with fish, which are caught in circular hand-nets cast from the shore, or by floating nets set further out. From the lake a rough road ascends a range of wooded hills, then drops down to Yungpeh.

Yungpeh is a forlorn-looking city, with ruined gateways and rugged walls; like most strongholds in the van of Chinese civilization, it is out of a job since the neighbouring predatory tribes saw the necessity for peace, and the advantages of intercourse with the dominant race.

The plain is surrounded by mountains, those to the east rising some 1,500 feet above the plain. A stream has cut so narrow a trench across the paddy land that it is invisible till one stands on the brink; it flows through a conspicuous gap in the ridge of hills to the west, below which is another plain. Beyond that again are the lofty mountains which

enclose the Yangtze. At Yungpeh I got an observation for latitude—26° 41′ 19″.

The country lying to the immediate east of the great Yangtze bend is unexplored, and I had no knowledge of a route from Yungpeh northwards to Yungning. However, I soon heard, as I expected, that a main road goes this way into Szechwan.

The whole region lying between the Yangtze loop and the Litang River is composed of limestone, with occasional bands of slate, or other metamorphic rock. The primary and secondary ranges all trend north and south, and the corridors between are cut up into a network of hollows by cross-ties from each range. The streams at first flow quietly, parallel to the main ranges; then turn and rend their way savagely through the obstruction. On the west side they gnaw a passage to the Yangtze; on the east side, to the Litang River.

Thus it was northwards, up and down this chessboard, crossing from square to square over a succession of rocky bulkheads, our route lay. For the first three days the road threads its way through wooded hills, almost uninhabited except for scattered Lao-p'ang families on the higher slopes. The Lao-p'ang, or Lolo, as the Chinese contemptuously call them, have an unsavoury reputation as brigands; but we had no personal experience of their prowess.

On the other hand, we saw several parties of peaceable-looking folk. The women are conspicuous for their large flat turbans of blue cloth, like a solid wheel. The men ride ponies when they can afford them, using a curious saddle with a high ridge in front, and tiny wooden bucket stirrups; just large enough to admit the toes.

The country here is very dry in the spring, after the long winter drought. There are few flowers in the pine forest, and such as there are have enormously developed root-stocks, hard, woody, often tuberous, and as large as a new potato. From this the tap-root descends far into the inhospitable soil. Perhaps the most striking are an Euphorbia with scarlet bracts, a dwarf Hemerocallis with tawny trumpet flowers, and a violet-flowered Dracocephalum.

Crossing the range which encloses the Yungpeh Valley, we found *Rhododendron yunnanense* in bloom, and *Rh. decorum* also. The flowers of the latter are eaten in Tali, under the name of 'white-flowered vegetable.'

At this season travel in such a country is truly delightful. We step from meadows incarnadined with *Primula Beesiana* into woods glazed with the snowy flakes of *Clematis montana*. In the forest are dark trees of *Rhododendron Delavayi* illuminated by the glare of their own flowers; and from forest we emerge on to open spaces where drifts of the blood-orange *Primula Bulleyana* (a close relative of *P. Beesiana*) gild the emerald lawns. Stout plants of this last are as much as 20 inches high, the several whorls tightly jammed with blossom.

After crossing a pass at an elevation of nearly 10,000 feet, we reached the Sha-ho, at this season a shallow stream, 15 yards wide, which flows to the Yangtze. Formerly there was a stout bridge here, to which the central pier and abutments bear witness; but the stone slabs which spanned them have long since been replaced by a few logs. Consequently animals have to ford the stream, which,

though easy enough now, might be difficult in the rainy season.

Crossing another pass, we saw a high limestone range on our right, and below us a fairy valley, diversified by open grassy glades, broken cliffs, and falling water. A scrub of holly-leafed oak and dwarf Rhododendron (*Rh. racemosum*), and one of the 'Scabrifolium' series, perhaps *Rh. mollicomum*, with the small-flowered spiny *Rosa sericea*, barberry, and hazel, carpeted the slopes. In the wetter glades lower down grew alders, oak, and *Pinus Armandi*.

The next range we crossed was the watershed between the Yangtze and Litang Rivers; henceforth all streams flowed eastwards. At the same time the country became drier. Forest and lawn disappeared, their place being taken by bush-clad cliffs and thin pine-wood.

At a village called Meikanko the Szechwan road diverged to the north-north-east. Up to this point we had been on a highway which, whatever its present defects, had once been of importance. Caravan traffic had passed this way; warriors too, perchance armies. Parts of it were stone-paved. By the Sha-ho we had seen the ruins of villages, long deserted, besides the broken bridge. What curse had blighted this fair country that men had deserted it?

The Szechwan road continued in the same strain; for a few miles we could follow it with the eye across the valley, but it was soon lost to view. Our road now became a mere track, and presently we entered the gorge of the Lapa-ho, which is a fair-sized stream, flowing northwards.

Crossing by a good wooden bridge to the village of Wakai, we presently reached the plain of Paichu-pa, the first serious cultivation met with since leaving Yungpeh. Near the lower end of the plain is the village of Paochu-kai, where there was a market in progress, attended by a picturesque throng of Lisu, Moso, and Lolo.

Below this the Lapa-ho makes a second **S**-bend, and entering a gorge, flows away to the east. Unable to follow the valley further, we turned to the west, and ascended a limestone range. Again the scenery changed. Here were rock-strewn slopes, ill-clad with ragged shrubs; and dry gullies. Ash-grey mountains, fretted into queer designs, stood against the blue sky; and the road rose and fell in rude flights of steps under the shadow of the cliff, till at dusk we reached a few poor huts. This place rejoiced in the alluring title of Kinshakow ('the gully of golden sand'). It seems that once upon a time gold really was found here. More recently iron was mined in these valleys, and heaps of slag remain to prove it. In those days there were more caravans on the road. But this industry too has dwindled, and now there are only one or two mines close at hand. Nothing remains of the place save its glittering name.

On the following day—the sixth since leaving Yungpeh—we reached another cultivated plain called Kanpatzu, where there were several poor Chinese villages. The largest is called Paerhchao. Rice, maize, wheat, and opium are all cultivated. These details I write, with names and addresses of the more important villages, as a sort of guide-book for future travellers, since the route is not even

mentioned in that dull book, 'C—102—con,' and that is out of print!

Crossing another wooded range, we made a knight's move on to the next square. There were Moso villages in a valley here, and a stream flowing south to join the Lapa-ho. A high limestone range, covered below with pine-woods, and higher up with mixed forest, still separated us from the Yungning basin.

On the south side of this range there was a fearsome amount of bamboo which surged up to the foot of the rather bare cliff. The steep lawns, wherever the bamboo left an open space, were yellow with drifts of *Roscœa cautlioides*. On the north face of the range were many trees, such as birch, maple, and *Rhododendron niphargum* (K.W. 4995), which, however, flowering in April, was now over. It is a slim tree, growing 20 feet high. The leaves are brilliantly silvered below, as in *Rh. grande* (*aargenteum*), and the flowers a pleasant shade of pink with a crimson blot at the base. It grows scattered or in clumps, occasionally forming whole forests by itself.

Lower down were pine forests standing in a pink and white foam of the dwarf *Rh. radinum*. Brown and yellow slipper orchids formed clumps here, amongst tuffets of carmine-flowered Androsace.

From the summit we looked across the basin of Yungning to the savage peaks and needles of the Marches; a wild, inhospitable country, outlined, flint-hard, against the glassy sky.

We descended by an excellent road to the lake side, and at dusk reached the little monastery of Yungning, on the edge of a cultivated plain. Yungning is the name of the district, rather than of any

particular village. It embraces a dozen or more villages, each with a name of its own. Not far from the monastery is the village of Kaichi, where the *Tussu* yamen is. The *Tussu*, or native chief, lives like a feudal lord, and divides his time between hunting deer in the neighbouring mountains and domestic bliss with his numerous wives. I found him a simple soul nevertheless, anxious to please, delighted with the presents I sent him.

The monastery is small, chiefly remarkable for a curious blend of styles ; the main architecture being Tibetan, while the roof and minor embellishments are as distinctly Chinese.

## III. A MOSO WAKE

TALI-FU is an interesting city. There are always events taking place there. If it isn't a massacre, or a mutiny of the troops, or a rebellion of students, it is at least a fire. Europeans in search of excitement might do worse than try Tali-fu. It is never dull.

In the spring of 1922 there lived an old woman in the main street. History does not record her name; nor does it matter. This old Mother Hubbard took her rushlight in hand one fine day and began systematically to explore the wooden walls of her house for bugs. As she warmed to her work in the joints and cracks, the bugs sallied out one by one, or possibly two by two, and were neatly cremated. So engrossed did she become in this fascinating game, that she grew over-eager, and actually set fire to the dry wood. Immediately the whole room was involved. Old Mother Hubbard's presence of mind in this crisis was exemplary. In an icy and philosophic calm she removed her belongings into the street. Then she gave the alarm. . . .

Six hundred houses and shops were burnt to the ground, but the death-roll was insignificant and there was practically no looting; which, considering that the city was full of police and soldiers at the time, was the most surprising feature.

This by the way I referred to Tali because

my cook came from that famous city. A missionary recommended him to me—but omitted to tell me his life-history. He merely expatiated in rosy terms on the radiant possibilities of his future, after the injection into his shifty soul of the spirit of Christian brotherly love. It subsequently transpired that he knew rather too much about fire-arms; suspiciously much for the yokel he professed himself to be. In the course of time I elicited the fact that he had been a soldier; had mutinied; had been stood up with his back against a wall, and just before the word was given, had been rescued by the missionaries. They never did China—or me—a greater disservice. That incident in his career would have frightened me, had I known it in time. Not that Chao ever killed me with his cooking. It would be disparaging to say he ever tried to. No. To do him justice, had he tried to he would have succeeded; the distressing thing was that he nearly succeeded without trying. Yet in his way he was a gallant scoundrel. Not till he stood face to face with death did he recant, and 'eat the foreign doctrine.' It was that or sudden death, and he staunchly chose the greater evil. Under the eye of the missionaries I believe he bore up well. It was only when he found himself thrown to the pagans—at fifteen dollars a month—that he allowed himself to depart from the straight and narrow way.

Reader, be wise. Never, never, never engage a mission-trained servant. They are not all rascals, of course; some of them are excellent fellows. Nevertheless, don't.

An odd idea has gained some credence that a

missionary is necessarily a very good, unselfish, unworldly, Christian man or woman. I know some of them are. I also know some of them are not. Let us be reasonable. Teaching doctrine is a job, like teaching mathematics, or expounding the law, or healing the sick. Some do it better than others. Some like it better than others. Some are better qualified for it than others. But remember, it has to be done according to formula. People make discoveries in medicine, and heal according to their light and learning. They make discoveries in engineering, or in horticulture, or chemistry. But people never make discoveries in theology, and all the light and learning in the world will not budge them from the ritual as laid down in the sacred books. At the worst, they put slightly different interpretations on the words. There are independent doctors, independent schoolmasters, independent engineers, independent preachers, even independent politicians; but there are no independent missionaries. And missionaries, reader, you will find are ordinary people like you and me, with the same wants, the same desires, the same hopes. (If not, shun them as you would the devil.) In other words, they are just ordinary folk, doing an ordinary job, for an ordinary wage; no better, and no worse, than the average of their fellow-beings, though often very poorly educated. They are entitled to no more respect than you are, and to no less. They have on the whole a pleasant, placid time; and though we feel they perhaps lack many simple pleasures which we enjoy, yet many of the disappointments of a more strenuous life are also lacking.

But their assumption of esoteric knowledge and

the power to intercede more effectually than a layman on the traveller's behalf with God, is amiable lunacy.

As I was departing from a certain city, a missionary asked me to come into the house for a minute. Then he prayed for me; he prayed for my men; nay, worse, he prayed for my mules, though Heaven knows they were past praying for. There was no escape. I realized that he meant well, and after all it did no real harm. I am not a fanatic; and I was grateful for his kind intention. If an *iman* mumbled the muzzein in my ear, I would listen politely, even curiously.

The missionary is often pleased to meet a traveller, and usually ready to help him. He would scarcely claim credit for that; and perhaps the worst that can be said of him is that he is too anxious to talk shop. He bores you with his *peculium*. If I meet a man in China pushing "Purple Pills for Pimpled Pagans," say, I naturally help him if I can; not in my capacity of distinguished botanist trying to wean misguided man of commerce from path of pelf to contemplation of beauties of Nature, but as one white man to another.

"Yes," retorts the missionary. "But religion appeals to all, botany to a few only. If I discuss religion, at least all are interested in religion."

"Are they? And in your particular view of religion, Mr. Missionary?" Botany is a hard word, and may frighten the timid; but beauty appeals to all, and is expressed by flowers as much as by anything else—religion included.

"But you are right!" I continue. "Religion *does* appeal to all." It is everybody's business;

and just because the religious sense, or spirituality, is inherent in us all, in greater or less degree, it is an impertinence for any man to set himself up to preach a truth, until he can teach The Truth. The number of men who have been able to do this is not large. It begins with Moses and ends with Jesus of Nazareth. These few men proved the truth of their teaching by the simplest of all proof—ocular demonstration. They taught The Truth, namely, God or Spiritual Causation, proving over and over again the non-reality of matter. Ordinary people cannot teach religion, for the reason that spiritual perception comes from within, not from without. What the missionary teaches is ritual; let us hope that spiritual perception sometimes follows as a result.

The traveller is always asked what he thinks of the missionaries. They appear to be regarded as a Problem, like opium, or extraterritoriality. I do not think there is any 'problem'; and those are my views. And so to Yungning.

In spring the irregular plain is an emerald isle assailed by an ocean of purple mountains. On the northern horizon the grim spikes of the Muli range fence off the Marches; and all across the western sky the ice-worn fells of Wa-ha divide the basin—plain and lake, from the River of Golden Sand.

To the south, behind a range of lower hills, through which a corridor threads its way tortuously, lies the lake; and in the middle of the barrier Lion Rock, breaking the even swell, rears up its great bulk, one long, straight-sided precipice, like a crater wall, facing the plain. Beyond the lake,

the mountains slant down towards the notch over which the road goes to China; and eastwards are barren ranges, yellow in the sunshine. When the setting sun flashes on the golden spire of the monastery, the most gorgeous colours steal over the scene. It is twilight. As the sun sinks down behind Wa-ha, the ranges turn crimson and purple, and finally indigo. The 'cone' stands out like a black triangle against the western glare; only the lofty white rim of Lion Rock continues to reflect the sunlight. Shadows fall across the sapphire lake; and the green of the plain turns sombre, with the weeping willows standing like mourners over the sad pools and marshes.

Reader, I am the prologue.

> Thus with imagin'd wing our swift scene flies
> In motion of no less celerity
> Than that of thought.

It is June, 1921. We are arrived at Yungning from Lashio. And behold, it is April, 1922; and again we are at Yungning. Much water has flowed under the bridge since then; but it is still the same river. Let us therefore pick up the thread of travel at Yungning again in April, 1922, and pass on our way.

All the mountains forming the rim of this great bowl we climbed in turn—Wa-ha, with its curious bottle-necked glacier cirques, the 'cone,' and the billowy ranges to the north which look out through a trellis of pine trees to the grey Marches; but Lion Rock proved the most stubborn of all.

There is a deep ghyll behind the cliff; and up the valley we proceeded, bent on reaching the summit.

Spring had come. Everywhere the bushes had broken into green leaf. Clouds of pale pink *Rhododendron yunnanense* trailed over the mountain side. Suddenly, in a night, all was changed. The temperature fell ten degrees with a swiftness incredible. It began to snow. For eighteen hours it snowed; and when we awoke the second morning, spring was dead and buried.

The sun came out. The snow melted slowly. A week later it had disappeared save from the high sunless alps, and the deepest ghylls, and the woods. But it was too late; the damage was done. All the shrubs which had stretched forth their leaves to the sun were mercilessly cut. The pale clouds of Rhododendron had turned dark and bitter. Catkins hung in tatters, ruined beyond recall; tender shoots drooped; buds perished half open. That was in April.

One bright May morning, just after the storm, three shots were fired from a village at the foot of Lion Rock. Chao came to me in a state of painful agitation.

"Sir," he said, "they are holding a great festival at Tze-pu, across the plain. The tribesmen will dance. Would not your excellency like to see?"

"Why, what is it, Chao? What is there to see?"

"It is a funeral dance, sir. All the lamas will be there, and all the village folk; and the barbarian will dance."

At that moment there was a trampling of horses in the yard below, and the high lama of the monastery jingled out with his escort; he too was going to the wake.

All day long, at intervals, maroons were fired.

There was high revelry under the shadow of the Rock. That night I gave orders that we would start for Lion Rock on the following day. The mules were called in from the hills, and the loads tied up.

When morning came, we started across the plain through fields where women were planting paddy and buffaloes ploughing the sludge; we forded the Kai-chi River, which meanders in a most extraordinary manner. So closely do some of the loops lie to each other that the neck of land separating them has been dug through, thus straightening out the river, and amputating the loop, which lies derelict, like a vermiform appendix, to become, first a marsh and presently cultivated land again.

At last we reached the village, which was hidden behind a clump of weeping willows, now shot with green. There were half a dozen wooden houses here, and a large open sward. And the sight which met my eyes was an extraordinary one.

Two hundred monks were drawn up rank on rank in solid square; their legs were also drawn up under them, for they were seated on the grass. In the van of the phalanx were the Hoplites—rows of light-fingered and light-headed choir-boys, who chattered and played between spasms of devotion. They had dirtier faces than the monks, and bare feet. A bald and toothless abbot, in full canonicals, sat on a pile of cushions under an awning surrounded by half a dozen friars. The episcopacy wore helmets of yellow felt, with a crest, or mane, which would have made a Roman gladiator green with envy.

Behold, then, the whole two hundred chanting runes. Now and again the toothless abbot would intone by himself in a sepulchral voice, and presently the entire hallelujah chorus would take up the responsions, in hopeless supplication, their deep, gloomy dirge mumbling and moaning like the sea after a storm. Only the *tra-pa*, or acolytes —boys not yet admitted into the priesthood, but kept on approval at the monastery—appeared to have a morsel of hope left. They were frankly bored with the whole show, but during frequent intervals for refreshment they showed signs of animation.

After a particularly intense chorus of despair, tea was served in wooden jugs. Every friar and monk and choir-boy took from within the ample folds of his red gown a wooden bowl, wiped it with his sleeve, and held it out for the grey-gowned verger to fill; while another followed with steaming rice-balls piled in a basket. But the toothless abbot and the hierarchy ate and drank from the finest silver-ware, aloof from the rank and vile.

The catering, which was entirely in the hands of Messers the proprietors of my inn, was exemplary. A long mud cooking-range, provided with half a dozen fires, had been built for the occasion, and here buttered tea, boiled rice, and pork were prepared for everybody. Huge iron pans full of cheap red rice were simmering over the flames, while servants churned tea vigorously in wooden cylinders, and pressed baskets of rice into balls. A barrier of smoked and pressed pigs stood on one side—there must have been a hundred complete carcases there, and butchers were hard at work cutting them up into

shapely pieces and boiling them by the hundredweight.

After an hour of mixed prayer and devil-scaring —for which purpose bells were agitated, gongs beaten, and maroons fired—the monks dispersed for recreation. They lounged about, or lay down under the willows.

By this time the whole broad, open space in front of the *Tussu's* house was crowded with villagers. They had come across the plain from the surrounding villages, dressed in their best; and having entered the *Tussu's* house, where the dead reposed, and seen all there was to see, they strolled about in the open and watched the yellow monks.

In their white accordion-pleated skirts and dark blue blouses, they looked comely enough. Nay, your Moso wench is a *chic* person, with merry round face and buttered tresses neatly braided, and bound round her head. She had come to the obsequies of a rich old dame, determined to enjoy herself. She had put on her best frock, very longest rope of amber, or coral beads; her finest ear-rings. She had even—rumour says—washed her face for the occasion. Would not all her neighbours be there, and the handsome young *Tussu*, and the high priest, and the Great White Stranger?

By midday there must have been a couple of hundred spectators present—a crowd of perhaps five hundred persons all told. Never had there been so magnificent a funeral within the memory of the oldest inhabitant.

The young *Tussu* puffed out his chest. He strutted through the mob. Magnificently he motioned to the cooks to redouble their efforts.

Tea was poured out like water. Whole pigs were sacrificed like so much pork. Bolus after bolus of rice was pressed into shape, holus-bolus. Multitudes were fed ravenously. After all, was it not *his* great day too? Was he not *Tussu*? Above all, was it not *his* great-grandmother who had passed away, and was about to be assisted into the next world with all the pomp and circumstance which money could buy?

Not only were the lamas who chanted masses for the departed fed, and the *Tussu's* friends, but a swarm of unsavoury beggars, attracted like vultures to the scraps, hovered whining in the background, and were likewise fed; while the usual herd of mangy dogs nosed about to see what they could lift when no one was looking—though they were far too cowardly to attempt anything which was not patently cast aside as unfit even for a beggar, and started guiltily if anyone in their neighbourhood moved as though to chide them.

I now entered the courtyard of the house, where the maskers were making ready and the ponies being decorated for the death-dance. Following the constant stream of happy mourners, I stepped inside the temporary chapel.

After the shrill sunlight without, the gloom was profound, and a minute or two passed before I could distinguish things. Behind the altar stood the coffin, draped in a richly embroidered silk cloth. It was not, however, of the conventional shape, but resembled a lady's hat-box with the contents badly crushed. On the altar itself—a converted table—was displayed much of the material wealth of the family. There were wonderfully emblazoned gowns

and surcoats, silver-mounted conch-shells from far-away India, ropes of saffron-coloured amber beads, copper teapots, and painted china. The walls were hung with saddlery and spears, leather helmets and jerkins, shields, and other warlike appurtenances. The place was a museum of heirlooms. Friends of the *Tussu* passed in and out, admiring and criticizing the funeral rites. Evidently much time had been spent in preparation. No expense had been spared. These mountains of food could not have been amassed at a moment's notice. The principals must have known for days beforehand that the old lady was going to die.

I waylaid the *Tussu*.

"Please tell me," I said in honeyed tones, "what did the venerable old lady die of?"

"Sire, I forget," he replied politely.

"Was she ill?" I persisted.

"No, sire. She was old, very old. I do not think she was ill. She died, sire. All men must die," he added sententiously.

A dreadful suspicion dawned upon me.

"When was it?" I asked sympathetically. "Yesterday?"

"Oh, no! It was in the third moon. "*T'su ih t'su erh.*"

I gasped. Seven weeks had the dame lain in her hat-b—— coffin! Day by day, for seven weeks, four lamas had said masses over her departed spirit, and prayed for its safe journey to the land of bliss. The dark days of doubt were over. The triumphal day of her awakening had now arrived. In a few hours she would ascend to Nirvana. In the meantime I bolted for the fresh air. A verger

with a rattle in his hand was recalling the monks to their devotions. The dinner-hour was over.

Presently there was a lively movement in the crowd. People began rushing hither and thither to points of vantage. From the yard came the thin despairing wail of reed pipes, and the peal of the long copper trumpets. Outside the red-robed monks, now seated once more, swayed to and fro as they chanted deliriously their guttural lamentation. A varlet placed three iron canisters of gunpowder in a row and, with a long brand touched them off one by one. They exploded with a fizz and a bang, shooting clouds of smoke up into the still air. The monks redoubled their lamentation.

Suddenly from the gateway of the yard people poured out pell-mell in a frantic mob. A pause, and six mail-clad warriors emerged, dancing slowly.

They wore on their heads iron casques, decorated with the long, barred plumes of the Amherst pheasant, which bobbed foolishly. Their armour consisted of a jerkin, or mail-coat, made of lozenge-shaped strips of leather, loosely sewn together, and trimmed with fur; they looked, in fact, grotesquely jointed, for all the world like the wood-louse, which rolls itself up into a ball on the approach of danger. To add noise, each man wore a girdle of bells, which jingled dully as, lance in hand, they capered, so that a touch of buffonery was added to the suggestion of mediæval pageantry.

With a loud yell these maskers danced out into the sunlight and jigged merrily.

Then with a rush came the six horsemen, who swept at a hand gallop across the plain. Maroons

were fired recklessly, one after the other. People scurried for cover as the ponies reared and spun, the band wailed agonizingly, the monks lamented, dogs barked.

The climax had arrived.

The ponies were gaily caparisoned. Their riders were dressed as mandarins in long silk gowns and tasselled caps. They circled round the village, and a few minutes later, in a haze of gunpowder smoke, and to the accompaniment of loud detonations and sad music, returned. The comic pikemen preceded them on the run, and, being not nimble enough in face of the onrushing ponies, were driven headlong. One man bit the dust and turned a somersault, accompanied by squeals of delight from the crowd.

The scene was now a lively one. It is impossible to do justice to the hubbub, or to the colours—the malicious green of the weeping willows by the brook, the crowds of white-skirted women with strings of amber and coral beads in their jet-black hair, the rows and rows of huddled lamas muffled in dingy red cloaks, the pale cadmium yellow cliffs of Lion Rock staring towards the setting sun, and over all the azure dome of the Tibetan sky. As the horsemen disappeared through the gateway the crowd made a rush, and in a few minutes the courtyard was packed.

Now came a strange ceremony. The white-haired warriors—for only village elders took part in this mummery—were drawn up on one side, and the ponies, riderless, stood in a flock at the foot of the steps. Before them, in the porch, with the dead body coffined in the gloom behind, illumi-

nated only by the dubious light of the butter lamps, stood the soothsayer, repeating prayers at incredible speed. And ever and anon the pikemen would stamp, and bow their bodies and shout "Ha!" in a deep, manly voice.

Then the soothsayer, having repeated reams of prayer, took holy water and poured it over the indignant ponies, who reared and tossed their heads and gave other unmistakable signs of boredom. But when they had likewise partaken of blessed grain, they felt better. A move was at last made for the open. Warriors, ponies, and spectators once more poured through the narrow gateway, and then there was enacted in the centre of the lawn, in full view of everybody, the silliest snap-dragon imaginable.

The white-haired soothsayer dragged with him a leg of beef (or was it mutton?) tied to a rope. The expectant warriors stood in a semicircle in front of him, lance in hand; the ponies were behind. The crowd stood round them in a circle. As usual the proceedings opened with long prayers, mumbled mechanically; no one payed very much attention —even the meat looked tired. Then, with a fatuous smile and still chattering, the soothsayer slung his leg of beef amongst the six warriors, who stabbed at it with their lances. But the wily wizard, with his rope, tugged it hopping from under their noses, and foolish, indeed, did the cross-eyed warriors look. The crowd roared.

More prayers, and another cast of the bait. Again the warriors stabbed feebly; but the bobbing morsel was dragged away more quickly than before, and no lance stayed its progress.

A third time this game was played, and again the baffled warriors drew blank. It was their last chance, and they retired meatless, the leg of beef reverting to the cautious soothsayer.

The sun was setting now behind the purple mountains. Dusk wrapped the plain, and a pale mist hung ghost-like over the river. Here and there camp-fires were beginning to twinkle.

Taking three of my men, and a lantern, I set out to scale the cliffs of Lion Rock. After three hours' climbing—for twice we were checked by precipices, and compelled to turn aside—we settled down on a ledge for the night.

A thousand feet below us twinkled the camp-fires where the wake continued far into the night. The country folk were dancing. The breeze wafted up to us snatches of song and laughter. We lit a fire, wrapped our cloaks round us, and snatched a few hours' sleep with our heads between our knees. It was cold at 10,000 feet.

I awoke to see the most vivid stars paling. Gradually the mountain ranges disentangled themselves one from another. The east brightened. Presently the plain detached itself and took on a definite tint, till its many arms which probe in amongst the crumpled foothills were visible. The twisted river caught the light and flashed like a spiral of silver wire. Day had dawned.

After some hard climbing we reached the summit of Lion Rock. The twin pyramids of the Gang-ka-ling range, ten leagues to the north, caught the rising sun, and gleamed like bergs against the pallid sky. On the other side, 3,000 feet below, the holy lake lay in shadow, calm as a sheet of plate-

glass. Immediately at our feet lay the village. In the centre of the field now stood the funeral pyre. Close by, the serried ranks of muffled monks sat on the grass, deep in prayer. All was ready for the last act of the drama.

As the golden flame of sunlight crept on, it kindled the shadows, which one by one shrivelled and disappeared; it touched the village and licked the lower cliffs of Lion Rock. And then in a flash it enveloped the whole plain in the burning beauty of a May morning.

At once we began to descend, helter-skelter. Down, down, till we were but a few hundred feet above the plain. We could see the dew sparkling on the grass and hear the groaning of the monks in their final chorus.

Suddenly without warning a column of pearl-grey smoke rose from the pyre and climbed steadily into the crystal air, till it stood up nigh a hundred feet. And still the monks droned on, their voices rising and falling.

Immediately afterwards a pillar of flame shot up from the heart of the oven, and the dense smoke cloud spread out and hung poised over the scene. The lamas arose in a body and withdrew, all except the high priests, who remained seated on their mats. These tinkled bells as the archbishop growled prayers over the holy grain which was being poured down the flaming chimney of the furnace.

Now it was all over. The spirit had gone to its home. The body had been resolved into its native elements, dust to dust, ashes to ashes, whence it sprang. The field stood empty and forlorn. The calcined furnace was razed to the ground. A few

starving dogs nosed amongst the ashes, and were succeeded by a flock of evil crows.

The last of the food was distributed from the cooking-range, and the beggars came with their bowls for a share. One by one the families departed to their homes, carrying legs of pork and bags of *tsamba*.

Finally came the sleepy lamas and received their wages—a little tea, a pinch of salt, a roll of cloth, and a silver coin, each according to his rank. The pontiffs receive great gifts for their services, while the *tra-pa*, or noviciate, who, not even knowing the prayers by heart, are present for the sake of experience and to swell the crowd, are content to come for their food.

And so to the beating of drums and gongs the lamas dispersed. The wake was over.

## IV. IN THE FOOTSTEPS OF CAPTAIN GILL

AFTER Yungning, Muli. But, reader, I do not propose to take you there again. If you love flowers, and have read *The Romance of Plant Hunting*, you will know all about Muli and the yellow lamas, and the blue poppies. I made a special pilgrimage to Muli in May, 1922, to see the Rhododendrons in bloom; for I had been too late for that the year before. And in June I returned once more to Yungning, dreaming all the while of a journey westwards from the Yangtze to the Irrawaddy.

From Yungning to Likiang is a week's march, due south through the narrow loop of the Yangtze. In order to follow the jig-saw twists of the great river we must cross it a second time by ferry at Fengkow (we first crossed it on our way to Yungpeh at Kinkiang-kai, you remember).

The summer heat in the brazen gorge is stifling. It strikes you from every angle—from rock and cliff, from the sand beneath your feet as well as from the sky. It is a relief to get back into the mountains.

Then we climb and descend, alternately all day and every day, till at last the wind blows clean from the snows of the Likiang range. For a day we march along the base of the range with peeps over

the tree-tops at the tumbled glaciers ; then descend on a long steady slant to the city.

What a queer contrary city is this Likiang ! It should be clean, for sweet water babbles through the gutters, down the steep cobbled streets ; but it is dirty. It should be hot and muggy, for it is shut in by hills ; but it is cold and draughty. It should be a city great and prosperous in trade, for all caravan roads meet here, from Tibet and the Marches, from Burma, and from all the rich cities of Western China ; but it is squalid, poor, and dull. Daily the market square fills with petty traders from the surrounding hamlets, and no caravans go out laden with rich merchandise. It is a sorry place indeed ; yet picturesque, with the snow-peaks to the north looming over it. And it is from this city, the last city in Yunnan, that we shall set out afresh on our travels.

. . . . .

There is no more remarkable strip of crust on earth than that where the great rivers of Eastern Tibet almost jostle each other in their eagerness to escape from the roof of the world. They issue from Tibet through a grooved slot in the backbone of Asia, and are squeezed between two of the mightiest uplifts in the world. Deep down in their troughs they rage. They cannot get out, neither can they spill over.

To the east flows the Yangtze. In the west, million-throated Irrawaddy gulps down inexhaustible waters, wrung from the misty hills. Between these two, the Mekong and the Salween force their way. The gap is narrow—barely 70 miles wide—and through it the four loud rivers rush. So they

must hustle. There is no waiting. They pour through together in one roaring, bouncing flood, and the iron-shod alps which hem them in lift their heads to heaven as they plant their feet in the howling water and brace themselves to the storm.

The Yangtze rolls along with pompous might, for it has come a thousand miles hotfoot. Already it has reached adolescence. To frolic would be undignified. But its solemn dignity is but a pose. It has nearly 3,000 miles yet to flow, before it attains to the wisdom of the sea, and is absorbed into the oneness which all rivers attain. So having shed its pose for a time, it breaks into riot.

The Mekong rumbles by in muffled laughter. It is as though it had slipped through unobserved, and had chortled at the trick ever since. It is a merry river, but often gusts of fierce anger seize it.

The Salween is neither so majestic as the Yangtze nor so trivial as the Mekong. Nevertheless, it is sedate. And then, with little cause, it is roused to a cold fury terrible to see. Emerging proudly from the stark gorges of Tsa-rong (the gateway to Eastern Tibet), it plunges headlong into the monsoon valley. Henceforward it is peevish and perverse.

But the Taron is the darling of them all. From aloft you may look down the frightful slopes, over forest and lawn, to the river shouldering its way through the velvet-coated gorge, 3,000 feet below. How puny it looks!—a weak and wayward river, inaudible, crawling along at the bottom of its deeply eroded valley. And then you come to it, and behold, it is a savage river, yet beautiful, with that ruthless beauty which compels grudging admiration.

To traverse this furrowed crust-belt, from the Yangtze in the east to the Irrawaddy in the west; to cross the great rivers and climb the great divides, was my ambition. Its object, to collect plants, and the seeds of plants which might be introduced into England, and to throw any light I could on the origin of this break-through.

A period of drought seems to have set in over Far Western China, and the glaciers have shrivelled and shrunk back. Why? There was reason to suspect differential movement along this tortured crust-belt, with faulting on a large scale. Then, too, there were problems in the distribution of plants to be pondered. Where, for example, lay the dividing-line between Indo-Malayan and Chinese floras? Had not the former once extended further east, and, beset by a changed climate, been routed and scattered? There were signs that it was so. Again, why was there so marked a contrast between the flora at the southern end of the corridor and that at the northern end?

Lastly, there was the lure of new flowers. The awe with which one greets a tiny alpine plant, maybe no bigger than a daisy, yet never seen before, is indescribable. One need not rove so far as Tibet for this revelation. Well can I picture anyone visiting Switzerland for the first time, kneeling spell-bound, overcome with gladness, at sight of *Gentiana verna*.

And so it seemed to me worth while to cross this gap, if thereby one might shed one single ray of light on the tangled past, or reveal one tiny plant to those who love flowers. For the plant collector's job is to uncover the hidden beauties of the world, that others may share his joy; and well though

he knows that the azure poppy will never look the same when caged in the garden, as it did when he first found it, a wildling of the mountains, yet there is also a beauty controlled and disciplined. It is no unworthy aim to reveal what God has planted in the lost mountains, since thereby may also be revealed what He has hidden in the hearts of men. No man can look upon the humblest flower, the dullest butterfly, the rudest shell by the strand—nay, no man can look upon earth and sky, the commonest rocks, and birds, and beasts, nor the everyday clouds, and not feel the better for it. To these things he is accustomed; but perhaps if he reverence them, greater things shall be revealed unto him.

It was not, however, till July, 1922, that I found myself once more in Likiang, free to start on such a journey, yet in such a poor state of health that I doubted the wisdom of anything so strenuous. However, it was now the height of the rainy season. Prudence suggested waiting till October, at any rate. In the meantime I would go north and see what befell; in the autumn I must decide by what route I would return.

July 18 was the 24th of the Chinese sixth month, and the first day of the "big rain," which, according to local weather-lore, lasts forty days. We had already experienced a little preliminary rain, but the lunar calendar was somewhat complicated this year, and a second fifth month had had to be inserted in order to adjust matters; which, perhaps, accounted for the discrepancy. If only the "big rain" came to an end at its appointed time, all would be well!

INDO-MALAYAN JUNGLE AND P.W.D. BRIDGE OVER THE TI-KHA.

On July 20 we left Likiang, travelling west now, once more towards the Yangtze. On the second day we crossed a low range and descended to the river, just above the first knee-bend. Here the river turns suddenly through an angle of 130°, changing direction from due south to north-east. A huge swirling lake is formed at the bend, and on the cliff above stands the town of Shih-ku. Just above Shih-ku, a broad valley, containing a small stream, opens into the Yangtze from the south-west, and it may be that the river once flowed down this valley. We spent two days in Shih-ku as I was laid up with rheumatism, and then, in hot, sticky weather, continued on our way.

Women do most of the work in the fields, and in the house too. The men help. There had been a fine crop of opium in the spring, and every loft was stocked with poppy capsules. At this season the standing crop was maize, which is much more common than rice. In the villages fruit trees abound —apple, peach, pomegranate, walnut, persimmon. Delicious little apples were to be bought, but not much else. Surrounding each house was a forest of masts, up which scrambled in eager haste runner beans; and we rode under pergolas roofed with huge-leafed pumpkins. In the walled gardens grew tobacco and capsicum (red pepper). As for the houses themselves, they comprise the usual farm-yard and sewer in the centre, with the rooms opening off above and stables below; at least, we generally managed to find an inn of this description, but if not, there was always a temple handy, and no one raised any objection to our sleeping there. The Moso houses are built of mud and timber, with

wooden roofs weighted with rocks; but there were always a few superior Chinese houses, with tiled roofs.

The "road," lying between stone walls, is generally under water at this time of year; nevertheless, with banks of travellers' joy and ivy smothering the walls, one is almost reminded of Devon lanes. The river is in striking contrast to the "loop" above Likiang. It is about 300 yards wide, flowing with an easy current and, though in full spate, broken by numerous islands, some of which are cultivated. It might be the Upper Thames, so peaceful does it look, instead of the great Yangtze, some 2,500 miles from the sea. When we reflect that all its greatest tributaries join in far below this point, we begin to realize faintly the size of this wonderful waterway.

After three days by the river, we reached Chitien, a typical Moso village. Here the road to Wei-hsi branches off. However, we did not turn off here, but continued by the Yangtze for another three marches. Gradually a change stole over the valley. The road became more difficult—high cliffs had to be crossed, where the river swung from side to side, narrowing to a hundred yards but flowing very swiftly. Villages were fewer, the houses larger and more roomy. We were approaching the gorges. Still, the valley was cultivated, with scattered clumps of trees.

On the limestone cliffs, in deep shade, I found many plants of *Primula sinolisteri*—a poor thing; true, it was over, save for a lingering bloom or two, but I was disappointed with it nevertheless.

Despite the furious pace at which the river now

swept round the bends, despite whirls and boiling eddies, there were no real rapids. It would be perfectly possible to travel by canoe or boat from the point where we left the river, to Likiang, a distance of 70 or 80 miles, and the trip could easily be made in a day. Constant vigilance would be required to keep out of the whirls, or from being hurled against the cliff, coming round the outside of a bend ; otherwise, there would be no danger. I was rather surprised to see no boats on this stretch (except a ferry-boat), whereas below the " loop " they are in constant use, shooting quite considerable rapids.

On July 29 we reached a village called Chi-tsung, and took up our abode for the night in a regular mansion, the best-built house we had stayed in since leaving Likiang. Prayer-flags fluttered all round the village, and *mani* pyramids—piles of stone slabs each inscribed with the Buddhist invocation—proclaimed the fact that we were again on the threshold of Tibetan territory.

Next day we left the Yangtze to turn up a tributary valley. There is a road by the river still, but of its nature the reports are conflicting. The Yangtze, at any rate, is henceforth confined in deep gorges, and the sight of these formidable cliffs, echeloned as far as the eye could follow, decided us not to attempt it. The valley we followed was well wooded, with species of oak, chestnut, spindle tree, and so forth, besides three species of Rhododendron —*Rhs. racemosum, yunnanense,* and *decorum.*

At dusk we reached a village where the road leaves the main stream to cross the range and descend to the next valley. It is curious how throughout all this country the tributary streams tend to flow, for

at least three-quarters of their course, parallel to the main rivers. Advantage is taken of this to build roads (if one can speak of " building " in this respect, or call goat-tracks " roads ") up the tributary valleys, instead of following the main rivers, whose formidable gorges render road construction a matter of some difficulty.

The main road to Atuntzu and the north goes by Wei-hsi, and the muleteers usually follow that road. Moreover, anyone going from Likiang to Atuntzu would rarely get mules to go the whole journey unless arrangements—including liberal pay—were made beforehand. Chinese muleteers prefer to ply to and fro on familiar routes. Normally, they would travel only as far as Wei-hsi, and there the traveller would be compelled to hire a fresh caravan. But there are not lacking signs that the Mekong Valley route is out of favour, despite the fact that the Chungtien road has long been closed. The Kari road, which we were following, despite three high passes between 12,000 and 16,000 feet, is generally used.

Since leaving Likiang I had been going along in that furtive manner usually associated with people in playing musical chairs; that is to say, I was prepared to halt suddenly at a moment's notice, and I scrutinized every resting-place we passed. The reason for this was that I anticipated meeting Professor Gregory and his son, who had been up to Atuntzu, and were now reported to be returning by this very route.

On July 31 we set out to climb the first pass, about 12,500 feet; and after a long climb, as luck would have it, at three o'clock in the afternoon, close

to the pass, I met the Professor with his son. We were miles from anywhere, even a camping ground, and there was nothing for it but to exchange greetings and news as best we might in ten minutes' roadside conversation. It was odd that we should both have selected this unfamiliar route, and very annoying that we had not met at the end of a stage instead of in the middle.

The ascent to the La-pu Pass from the south is very steep, the path zigzagging up a shoulder of the mountain, which trends east and west. The forest below is full of splendid trees—ash, maple, elm, oak, Pyrus, Rhododendron, and many others, including a few giant Pseudotsuga. At the summit Rhododendrons are abundant.

The descent is equally steep, and follows the bed of a stream, which was now functioning. It was interesting to note how sensitive Rhododendrons are to aspect. On the south flank, I noticed four species, all having the leaves glabrous, or almost so. On the north flank also were four species, but not the same ones ; the under-leaf surface was in every case covered either with a dense woolly coat—as in *Rh. niphargum*—or with a crust of scales. One species on the north face was still in flower.

After a seven hours' march we reached a village at dusk, wet through. It was a miserable place, for, though we lodged in the best house, every room leaked, and some of them had one side open to the weather. These folk certainly lived the open-air life. However, we survived the night, and next morning the sun came out and dried things up a bit.

Continuing our journey, we descended to the Kari River, which is surprisingly big, flowing from north

to south for quite 40 miles before turning abruptly east to join the Yangtze. It is a boisterous stream, and evidently affords good sport to the fisherman, for we saw several Tibetans knee-deep in the water with rod and line. A fish was landed as we passed, a fine fellow weighing six or eight pounds. We bought it for twenty cents—about sixpence—and found it extremely good eating. We were now down in the lower regions again, 7,000 to 8,000 feet above sea-level, following up the river through a succession of picturesque limestone gorges for two days. Here trees descended to the brink of the river. Conspicuous were species of juniper and a splendid Euonymus, laden with pink capsules which dangled by long stalks. The most interesting flowers were a rose pink Androsace, Pedicularis, and a fine tawny-orange black-speckled tiger-lily.

More interesting were some nasty-looking corpse-white caterpillars feeding on the leaves of a big Phytolacca which grew in every village. The caterpillars were very conspicuous on the dark green foliage, and at no pains to conceal themselves. No hungry bird could have failed to see them. What, then, was the secret of their immunity? Chemical warfare!

Along the back of the caterpillar was fixed a double row of papillæ, for all the world like the tentacles of a starfish. On handling it, drops of fluid, of a pure golden yellow, began to exude, not from the papillæ, but from a row of tiny portholes along either flank. The papillæ were merely triggers. You pressed the button, the caterpillar did the rest. If the pressure was maintained, the creature sweated until it was enveloped in a bath of

golden syrup. The liquid had a faintly disagreeable smell, and a drop placed on the tongue proved pungent, like pepper, and left a bitter taste behind. Evidently an acid. Now, it is easy to say that no sensible bird would eat such a nasty morsel. But first he must learn, and remember, that it *is* nasty. If the caterpillar does nothing about it till he is touched, and if the first thing that touches him is a large and powerful beak, he will be hurt before the aggressor, smarting from a drop of vitriol injected into his eye, can release him. It would be poor consolation to the caterpillar to reflect, from solitary confinement in the bird's crop, that it—the bird—was going to be sick.

I therefore performed other experiments to discover whether the caterpillar could be induced to exude warning drops without contact. The result was what I anticipated. On blowing him ungently, or on tickling him up by means of a burning glass, he reacted so violently as to squirt jets of fluid to a distance of six inches ! Obviously, then, a small bird might easily receive a contribution in the eye. True, the caterpillar's aim is erratic ; but with the entire battery in action, the chances of a ' bird's eye ' are considerable. The merest touch, the stimulus provided by the beat of a bird's wing, might let loose the dogs of war ; and though the caterpillar was unable to distinguish between my finger and a twig, he could to some extent distinguish stimuli. Otherwise any chance breeze might open the valves.

The Darwinian school will have some difficulty in accounting for this on any theory of natural selection. For a variety of caterpillar which produced an infinitesimal quantity of acid would have no more

chance of survival than one which produced none at all. Moreover any like caterpillar which was unarmed would be most unlikely to survive ever to produce any variety.

But we may go further than that. A caterpillar which produces even a single drop of complex acid—probably a waste product in the first instance—differs fundamentally from one which produces none at all. A chemical reaction takes place, or it does not. There is no half-way house. The step is a leap of some sort, if a leap in the dark.

We may now try to visualize the steps from a harmless necessary caterpillar to a belligerent larva such as I have described. The golden syrup is at first, no doubt, a waste product. It disagrees with birds who eat the caterpillar; but unless the caterpillar informs the birds in plain language that he *is* unpalatable, the caterpillars will continue to be eaten, the birds to be unwell. It is not sufficient to *be* objectionable; you must tell everybody about it.

The next step, therefore, was to display the poison, so that the bird might know it was there and learn to leave the larva alone. In other words, the waste product must be visibly exuded, which implies storage, and release at the critical moment. We now find our larva beaded with acid, to warn off inquirers, rather than perish while making them sick. Another little jump takes us to a stage where so much liquid is produced and stored that it can be squirted out of ducts provided for the purpose with no little violence. And finally, hair triggers are added to fire the broadside at the moment of danger.

This sketch may be fanciful, nor do we know *how* the leaps are taken; but it would appear that the course of events is not altogether unlike that suggested.

It was hot and muggy in the middle of the day. At night a chorus of frogs and crickets chanted monotonously; but there were no insect pests, except, of course, domestic ones, in the houses. *Culex irritans* was always to be had without the asking, also other of the "minor horrors of war," as Sir Arthur Shipley calls them. In China they are always with us, and are characteristic of peace, perfect peace, though they do their best to disturb it.

Mosquitoes are rare in the lofty interior. True, they were abundant at Yungning, even at 9,500 feet, necessitating the use of a net. But the Yungning plain is full of marshes. Sand-flies are not unknown in the forests during the summer, but their numbers are limited; while the clumsy great yak flies, which abound in the alpine meadows where the yak graze, are easily dealt with.

Leeches occur, but they do not sit on the bushes and crawl into one's ear; they stick to the road, and are picked up by the mules and ponies. Of course, if you go westwards to the rain-drenched forests of the malarial Salween Valley, a plague of insect life will be encountered, but Northern and Eastern Yunnan, indeed the greater part of the province, is remarkably free from any such curse.

This road is much used by Tibetan caravans travelling to Likiang and the south nowadays. We passed a score of them. One tall Tibetan addressed me in Burmese, much to my astonishment; he seemed equally surprised at my halting and lame replies.

Perhaps he mistook it for English. I learnt that he had picked up his Burmese in Mandalay.

On August 4 we crossed the Kari Pass (13,300 feet) in drenching rain. Again was apparent, near the summit, that sensitiveness of Rhododendron to aspect already remarked. On the south flank—the range strikes east and west—were smooth-leafed bushy species, or in the forest, small trees; *Rh. Wardii*, conspicuous even in foliage; *Rh. decorum*; a species of the 'Selense' series, and another allied to *Rh. trichocladum*; and in the thin forest towards the summit, low-growing bushes of *Rh. floccigerum*, its leaves coated with fluffy, sloughing fur. But for the last few hundred feet the pass was indeed naked.

Immediately we crossed the floor, however, we were in an entirely different atmosphere. Here we entered solid Rhododendron forest, and for a thousand feet of descent there was practically nothing else. There were eight species, with hairy or scaly leaves. Moreover, on this side they grew in massive formations composed of one or more species, not in mere clumps, or scattered through the forest.

Just over the pass, *Rh. saluenense*, a dwarf carpet-forming species, its brooms scarcely rising fifteen inches above the slope, was in full bloom, and little past its prime. This on August 4! The large flowers formed pools of vivid purple amidst the trees. One forest-forming species had the large, densely felted leaves of a 'Falconeri'; another, lower down, was the widely spread silver-leafed *Rh. niphargum*; a third, *Rh. microterum*, joins in the fray, its ascending trunks sweeping up from the steep slope and making progress along the face of the mountain wellnigh impossible; a fourth, perhaps, like the

last, one of the ' Lacteum ' series, or an ' Arboreum,' with leaves brilliantly silvered below, but ageing to buff, had lingering blooms of pale pink spotted purple, remarkable for their fragrance.

On the lawns below the forest were scattered tuffets of a ' Lapponicum.'

On the following day we reached the monastery of Tung-chu-ling, perched upon its sugar-loaf hill. The weather was still very bad, and we arrived at nightfall drenched to the skin. Also on this occasion we had a slight mishap, for, owing to a misunderstanding, the mules followed one road while I, accompanied by one of my men, followed another. The mules reached the monastery all right, after dark, but we halted at a group of poor houses just below. The doors were shut and we were sternly told to go away ; but one door we found open, so we entered into possession. An old woman was the sole person in charge, but she did not appear to be very surprised to see us. However, when we tried to get something to eat, she sought refuge in lack of understanding. Money would not tempt her—perhaps she had her suspicions that we were not *bona-fide* travellers ; signs she either could or would not comprehend. As we could find nothing, we had to go hungry to bed. " Bed " consisted of lying down on an uncommonly hard floor, which proved to support a larger population of fleas to the square foot than any other floor with which I have had dealings.

Moreover, the room was half farm-yard. A calf was tied up in one corner, and spent much of the night chewing ruminantly. A rooster, perched upon a beam, made villainous noises long before the sun

thought of getting up. "Brother Yang"—as the men called him—my companion in misfortune, undismayed by these drawbacks, slept soundly. I had to wake him up several times and talk to him about it.

The night passed with lagging footsteps. No breakfast being available, as soon as it was light we set out to seek the caravan. We had not far to go, for, having ascended the last few hundred feet to the monastery, there were the men inside the yard. A succulent smell of cooking told us what they were doing. They were rather scornful of our mishap in a covert way, though my head muleteer explained at some length that it was not his fault—which, of course, it was not. They had arrived even later than we had, and must have passed within a few yards of where we were trying to sleep.

However, I found a comfortable room at the monastery, and, after a bath and some breakfast, felt much refreshed. Nevertheless, at the request of the muleteers, we rested here for the day. There was a very high mountain to cross before we reached Atuntzu, and a day's rest in preparation seemed only reasonable.

One monastery in Eastern Tibet is very much like another. Even their setting is similar, for they generally crown some conical hill or cling to an almost inaccessible cliff; they vary only in size and wealth. The latter makes itself felt in internal decorations and fittings, and also in the size and number of the golden and copper chimney-pots, pepper-pots, flower-pots, and spires which decorate the temple roof. Consequently, there is not much to be said of Tung-chu-ling which would not apply

almost equally well to any other monastery in these parts.

The black-curtained temple, as usual, forms one side of a small paved court, and wooden galleries run the length of the building opposite. Heavy wooden doors, behind stout square-hewn pillars, give entrance to the gloomy hall of prayer, of which nothing can be seen from the steps below, for all one may peer and pry. It is this blunt contrast between the clean-looking exterior of the monastery—stark white, tipped with flashing gold—and the dim, evil-smelling interior, cramped and sunless, which is so startling.

The "living Buddha," otherwise the chief lama, was away, and I kept to the guest-chambers in rear of the building; for the lamas of this part of Tibet are not noted for friendliness to strangers, or for hospitality either. Nevertheless, I was given comfortable quarters and spent a quiet day in the sunshine on the roof. We all needed a rest after thirteen consecutive days' marching in all weathers, over roads which were for the most part the beds of streams.

Next day we started on the last lap to Atuntzu.

## V. THROUGH THE HIGH PASTURES

THUS we crossed the Yangtze-Mekong divide in August, which is the silly season for flowers; however, there were more at high altitudes than down in the scorched valleys. At 16,000 feet the blue poppies were still in very fair condition, and the screes were striped yellow with clumps of Saxifrage; a few gentians of bewildering blue were just opening their eyes. It is a curious fact that as you travel eastwards the gentians open later and later. In Switzerland they flower in July; further east, in the Balkans, in August; at the other end of the Himalaya, in September or October.

The Yangtze-Mekong divide is here fissured longitudinally. Overlooking the Mekong is the snowy Pai-ma-shan range; on the other side, towards the Yangtze, is a high, undulating grassland plateau. Between the two is a deep ice-carved trough, which collects the water from both sides. The range trends north and south, between the two rivers; and the road on the summit plateau also lies north and south, or nearly so, seeking a way down to the Mekong. It follows the foot of the high, bare limestone escarpment of the grass country, with all the Rhododendron moorland and the milky glacier-fed stream between it and the snowy range.

This Rhododendron moorland, though now drab, is in the spring a many-coloured sea of bloom. What heather is in Scotland, the dwarf Rhododendrons are in the Chinese alps; but instead of an endless haze of purple, the hill-sides here are chromatic with many colours. They grow ankle-deep, no more, thick and twiggy, covered with wee crusty leaves; but the flowers are large in comparison. Pale gold and lavender blue, plum-juice, wine-red, and flame are some of the favourite colours. On Pai-ma-shan the carpet consists largely of *Rh. chryseum*—one of the few yellow-flowered 'Lapponicums'—and a purple-flowered 'Lapponicum.' Only solitary blooms of these lingered on till August. One of the aromatic leafed 'Anthropogons' is also common. The under-surface of the young leaves is covered with a scurf of silvery-white scales, which turn a deep rust-brown as the leaves age. At higher levels I noticed the crouching brushes of a 'Saluenense.'

The view of the snowy range from the point where the road switchbacks over the high downs is wonderful; but though only a few miles distant, they are rarely visible during the summer. The plateau summit, on which the topmost ridges stand, is then swathed in mist. It comes rolling up like a sea-fog out of the Mekong on one side and the Yangtze on the other, and then for an hour the cold, pricking showers rocket through the high valleys, and rumple the blue glacier lakes, and blot out the snow-peaks. Then out pops the sun, and for ten minutes you can see the whole coloured, tortured world around you, while the battery is being recharged for a fresh onslaught.

We spent a week in camp on the Rhododendron

carpet, seeking devious ways to the high places. On the first day, at 15,000 feet, three of my men were quite prostrated with mountain sickness—that is to say, feeling the effects of the altitude, they at once threw their hands in, and decided they could not play. Two of them must be given ponies to ride, and the third, seeing that we had but two riding animals to spare, must at least do no work in camp. Nor did the other two, my head muleteer and cook, do anything that you could notice except groan. Unfortunately, the third march from Tung-chu-ling, which should have been comparatively easy, was unduly prolonged owing to the heavy weather made of it by the sick; and it was dusk and raining when, having achieved the Rhododendron plateau, we at last camped on a terrace at the foot of the limestone crags. There was no firewood here—at an altitude of 15,000 feet we were above the timber—but there was one perfectly good stream, and a large mastiff gruffly informed us that there was also a herdsman's tent in the hollow hard by. After navigating a sea of glutinous mud churned up by half a hundred yak, which nightly stamped themselves in, we reached this haven, only to find the poor man drunk, but sober enough to give me some hot milk and as much firewood as my men could carry away in return for half a dollar. So we camped, and, having sorted ourselves out somewhat, slept. It took the sick a couple of days' hard breathing to get accustomed to the thin air, but eventually they pulled themselves together a little—all but one, who was promptly dispatched to lower elevations.

Then we moved westwards across the plateau,

camping in a high valley opposite the amœboid glacier which crawls down the face of the northern peak. This peak is called Tzaya. The next peak to the south is called Omagu; and the two over-deepened troughs which carry all the glacier water (for there are no glaciers on the Mekong flank) are called Zhimonyi and Zhimonyung respectively. This part of the plateau is well known to the herdsmen, and to a few hunters. Our secluded valley was separated from Tzaya only by the deep Zhimony, at the head of which is a difficult pass to the Mekong. I had crossed this in 1913. On this occasion I ascended the Zhimonyi to the foot of the glacier which descends from the north face of Tzaya. In the course of this climb I discovered a small glacier hidden in a couloir high up on the other side of the valley—that is, on the next peak north of Tzaya. Formerly, this, the most northerly of the Pai-ma-shan glaciers, sent three branches over the cliff into the Zhimonyi. South of us, forming the other wall of the Zhimonyi and separating it from the Zhimonyung, was a high but thin rock partition, which stuck out from the saddle between Tzaya and Omagu. At the head of our valley, which ended in a cwm, was a big lake.

It is very difficult to estimate the heights of the Pai-ma-shan peaks, or indeed of any peaks; one may so easily be 1,000 or even 2,000 feet in error. But Tzaya is probably little more than 19,000 feet high.

The point is important, on account of the general retreat of the ice in this region; we do want to know for each divide, how far the ice has retreated, where the present snow-line lies, and the heights of the loftiest peaks. For this reason I give at

the end of the chapter the barometer readings at several points on the plateau, and such deductions as to the absolute altitude as one can safely make.

Meanwhile I went out to seek plants, ascending the wide, shallow valleys cut by streams through the immense moraines, which formed much of the plateau between us and the snow-peaks; and the deep trench-like valleys ploughed out by ice. The glaciers themselves were little shrunken, frightened things clinging to the dark porphyry cliffs, and it was necessary to cross all the wide guttered moraine even to see them; and the 1,000-foot-deep channel, too, to reach them. But the gravel-beds which stretch from the Pai-ma La [1] and the limestone escarpment, eastwards to the ice-trough, and far down the valley southwards, you would never recognize for moraine, so smothered are they under their carpet of Rhododendron and wild flowers, were it not for the many frothing becks which have cut pretty sections of it. Besides, it has been sifted and sorted and tidied up not a little, and is now converted into a garden, disarrayed but lovely. On one such moraine I found the silvery cushions of *Myosotis Hookeri*, but there was no sign of their having ever flowered. This gorgeous rock-plant is both the prize and the despair of the collector.

And what flowers are found! Even as late—or as early, for there is a brilliant autumn flowering season in this country—as mid-August the cliffs are lined with Pedicularis (one I found outwardly resembled a Salvia), snowy Polygonum, alpine

[1] The Pai-ma La is the actual pass over the Yangtze-Mekong divide at the head of the plateau.

monkshood, Draba of the Crucifers, and plenty more oddities which might ring a little unfamiliar to the most ardent plant-lover. Saussurea, for example. Our gardens are not full of Saussureas, and, if they were, would not look the more adorable on that account ; since, given a little rough flannel and a pattern, you could make a tolerably good imitation of a Saussurea. For, though my business in life is to collect plants, and as far as possible inject them alive into this country and then write and talk about them, not one in a hundred could be called the People's Plant (or ever will be ; the People's Plants have mostly been found long ago).

But if Saussureas are a little esoteric, that is not true of Meconopsis. Every one has heard of Meconopsis, or Himalayan poppies, also called blue poppies, because most of them—not all—are blue ; and when I say blue, I mean blue—sky blue, turquoise, navy blue, indigo—and not lavender.

The sheltered gravel slopes at 16,000 feet were vivid with the sumptuous violet of *Meconopsis rudis* ; while even higher, amongst the abandoned boulders, *M. speciosa* still wore Cambridge favours as big as teacups. This last is fragrant.

After a few days here we returned to the pass. One day I ascended the limestone escarpment, by a defile. The stream was fringed with flowers, fragrant Cremanthodium, and nodding Primulas. Abundant in boggy places were *P. Wardii* and *P. chrysopa*. The latter has purplish mauve or lilac flowers, with deep orange eye, and is delightfully fragrant. Calyx, bracts, and scape are heavily crusted with snow-white meal, which shows up the flowers well. The plant stands some 10 inches

high. Other species were *P. pseudosikkimensis* and *P. secundiflora*, neither of them, however, in flower. On either side the chalk-white cliffs, with their feet buried in rubble, towered up to airy spires; and on the rubble slopes were more flowers. But the cliffs were almost naked.

After reaching the top of the corridor, which pierced right through the escarpment, I emerged dramatically into wide and wonderful pastures. On every side an uncharted sea of rolling downs, 16,000 feet aloft. Innumerable rills oozed from the shallow, bowl-shaped valley heads—it was amazing the amount of water wrung from these Elysian fields—and swelled into brooks girt with flowers. Where the hill-sides were not emerald green they were bright red with the stain of manganese. The wind raced splendidly out and across the plateau, and over the ridge and back again it sang the song of the free; then swooped on and whispered to the meadow flowers till they nodded their heads. It came rollicking over the passes and stirred the tufted rock-plants; or whistled coldly through the corridors, till it reached the open heights. It buffeted the stolid yak which dotted the slopes in their hundreds, and spun out their long shaggy hair and fluttered it bravely. And everywhere water sucked and gurgled as it collected into rills.

Nowhere as far as the eye could see to north or east or west was there a rock or a tree to break the smooth, even sweep and heave of the plateau; only behind me the glazed white girders of the world, grinning defiance, poked through the green plush lining.

The setting sun flared on the red ranges, and a

sheet of white mist sailed solemnly up from below, shrouding the valleys one by one. Then I climbed a thousand feet up the pale screes to the crest of the escarpment. There were golden saxifrages in flower on the cliff, widely scattered tuffets, but glaringly obvious in the wastes. Most of the flowers here were over, but I recognized in fruit plants of such characteristic form as *Meconopsis Souliei* and *Primula dryadifolia*. Finally, as the mist flying up, I crept back to camp with the sting of the rain and the cuff of the wind in my face; sweet night came down over the immeasurable earth.

Turning for a moment to the plants, I was particularly struck by the difference between the flora of the limestone escarpment and that of the porphyry range only a few miles distant. There were, of course, a number of alpines common to both species of Draba, Pedicularis, Corydalis, Polygonum, and others; but no one could fail to notice flowers on one formation which were lacking from the other. This was particularly prominent in the case of such genera as Rhododendron, Primula, Meconopsis, Cremanthodium, and Codonopsis; and holds true, perhaps in a lesser degree, of Saxifraga, Saussurea, Gentiana, Gaultheria and others. *Myosotis Hookeri*, too, is confined to non-calcareous rock. I found, when climbing to the summit of the limestone escarpment, that comparatively few new flowers appear at great heights. Once the tree-line has been left behind, those flowers found towards the limit of flowering plants, say at 16,000 to 17,000 feet, are mostly dwarf forms of those found at 14,000 to 15,000 feet. But there are exceptions. *Meconopsis speciosa*, *M. integrifolia* var. *brevistyla*

(or *M. Souliei*, as it ought, perhaps, to be called), *Myosotis Hookeri*, *Primula philoresia*, and *Saussurea trullifolia*, for instance, are found only at the loftiest heights; never below 16,000 feet, at any rate.

I have often wondered how such legions of flowers are pollinated on these wet, misty mountains; for though it is true you see butterflies (particularly Apollo) and even humble-bees on the mountain tops, in fact, wherever there are flowering plants, still, they are not particularly abundant; one suspects there are not enough of them for the job, even working overtime. And yet not only are many of the highest types of flowering plants met with at the loftiest altitudes, but examination shows that not a few of them possess an elaborate mechanism for ensuring cross-pollination. This can only be effected by insect agency. I will go into the details of two which I observed, a yellow-flowered Cyananthus and a lavender Codonopsis—probably *C. tibetica*.

Both flowers are completely protandrous—that is to say, the otamens shed their pollen before the stigma is ripe, or even exposed. In the Cyananthus the flat, spear-shaped anthers are coherent, and form a collar round the neck of the style, against which they press tightly, as though held in place by a spring. The style at this period is club-shaped, and covered with papillæ.

The anthers open before the style elongates, so that the tightly closed stigma is forced up through the collar by the growing style. In so doing the papillæ entangle the pollen grains, which are hoisted aloft.

The female stage now begins. The stamens, having done their work, collapse against the perianth,

and wilt, leaving the style free in the centre. The stigmatic knob opens, revealing the five rays, which curl back, exposing their sensitive surface and completely concealing the self-pollen, if any remains.

It is owing to this fact that the young flowers look so different to older ones, the latter having, as it were, a yellow star—the five-rayed stigma—in the centre.

In the male stage of Codonopsis, the five concave anthers stand ready to clasp the globular stigma as soon as it shall have swelled up sufficiently to fit into the space provided for it. The anthers have shed their pollen on to it, and presently fall back against the corolla and wither.

In the female stage the globular style-head opens, and the three cream-coloured convex stigmas slowly uncurl, the self-pollen either falling off, or being, at any rate, carried out of the way.

The object in either case is the same—to concentrate a mass of pollen where an insect, butting into the corolla tube, *must* come up against it. It is then probable that he will carry some away, perhaps to a flower in the female stage, thus ensuring cross-pollination. Self-pollination is practically impossible in either case. Apart from the concealment of the self-pollen on the underside of the stigmatic lobes, the pollen grains are probably dead by the time the stigma is ripe; or, at any rate, so feeble that they would stand a poor chance in competition with vigorous cross-pollen.

It is obvious, however, that in the case of any completely protandrous flower there must be a heavy loss of pollen.

Thereafter we crossed the Pai-ma La, and descended the long glaciated valley which leads, not,

indeed, directly to the Mekong, but northwards and over a low pass into the Atuntzu Valley.

Below the Pai-ma La is a long glaciated valley, filled with boulders, and with here and there an emerald green lawn of spongy turf. Bushes of *Rhododendron helvolum* grow here, filling up space between scattered larch, fir, and juniper trees. *Rh. helvolum* has the youthful silver and elderly buff under-leaf surface characteristic of the 'Lacteum' type. The flowers—now, of course, over—are pale purple suffused with a pink glow, darkly spotted. Here it formed a stout bush 6 or 8 feet high. But it is one of those species which is not content with the sheltered life, but must needs ascend to the bleak pastures above, there to battle with the elements. Here it forms a densely tangled scrub 1 foot or 18 inches deep, so hard and closely woven that one can almost walk on top of it. It is the highest scrub-form (not dwarf) I met with.

Lower down we came to a bank overhung with trees, and covered with *Primula pulchelloides* in full bloom. This species has suffered rather undeservedly by comparison with *P. pulchella*—if, indeed, the two are distinct. The flowers of *P. pulchelloides* are rather smaller, but there are quite as many of them in the truss, and the colour is as good. *P. pulchelloides* is probably the hardier of the two.

We lunched in a sea of blue Cynoglossum, while above us the 10-foot stems of *Thalictrum dipterocarpum* trailed lilac clouds. In the dry valley below Atuntzu, the straw-yellow thimbles of *Clematis nutans* tottered in the hedges, and the bush-clad slopes throbbed with the fierce blue of *Delphinium yunnanense.*

Abies Rhododendron, and Bamboo, Mekong-Salween Divide.

And so to Atuntzu, reached on August 19.

Nearly ten years had passed since I last saw Atuntzu. However, I did not expect to find much change in the place, nor was I disappointed. Obviously the Tories were still in power. The steep, narrow streets were as dirty, the houses as noisome, the people as inert and squalid as they had been a decade since. One change had, indeed, been effected. The ruins of the monastery had been finally cleared up (it had taken ten years to do it) and a tolerable parade-ground laid out on the site. Here an alleged company of soldiers lived in barracks, and a bugle was blown at sunrise and sunset; but as their officer spent his days gambling with the merchants (the outward and visible expression of republicanism in Interior China), and doubtless his nights with his 'gun,' [1] one could hardly be surprised at licentious soldiery getting a little out of hand. I believe they were drilled for half an hour one day while I was there. My quarters overlooked the parade-ground, and I heard noises which might possibly have been words of command (with comment). After that burst of energy, they sank back into the slough. There was one striking feature about these soldiers. Their white uniforms would have made them almost invisible in the snow, and it certainly does snow in Atuntzu, in the winter. On the other hand, being of thin cotton, it appeared a little inadequate for a winter campaign.

There were persistent rumours of a Tibetan attack on the place; consequently the shops were almost devoid of supplies, as no merchant was foolish enough to fill up with stock which might be lost at any

[1] In Yunnan the opium-pipe is called *ch'ang*, i.e. gun.

moment. However, no one seemed to worry about the impending disaster, least of all the magistrate. A Gilbertian touch was added to the situation by the sight of Tibetan soldiers wandering about the street making purchases. True, they were unarmed; but you could tell they were soldiers, because they wore boots.

I occupied a couple of rooms in the long abandoned Pentecostal Mission-house, opposite the derelict telegraph-office. The Mission—a timber house, built in the Tibetan style, with flat mud roof—was like a charnel-house. Water poured through the ceiling every time it rained, which was every day and all day now. There were pools on the floor in which you might have caught fish. The floor-boards were warped like a piece of corrugated-iron roofing, and an engaging odour of fungus enveloped each room. I forget how much the house had cost—quite a considerable sum, for it had been good of its kind once upon a time; but words without deeds do not move the mixed breeds of Atuntzu, and they had been abandoned by the apostles of light as beyond redemption. No one could blame the apostles. Anyone who attempts to clean up that Augean stable with anything more gentle than T.N.T. is wasting his time.

After a couple of days in the Mission-house, dodging the streams of water, I moved across the courtyard into the telegraph-office, which was, at any rate, waterproof. When I was last here, the telegraph-line ran from Likiang, via Chungtien, to Atuntzu; but since the Tibetans had retaken all the country east of the Yangtze (including Chungtien) some years ago, telegraphic communication with Atuntzu was suspended *sine die*. However, there were still

the mails, which went by the Mekong Valley route. And when the local post office did not suppress letters as likely to be inconvenient, or playfully withdraw them in order to remove the stamps and sell them again, it was a comparatively simple matter to send letters down-country. It would have been an easy matter (apart from cost) to have taken the telegraph-line also by the Mekong road. But since in the old days the line had been used solely for expediting the dismissals of inconvenient magistrates, officers, salt officials, and other parasites, at the Atuntzu end they were in no panic for its restoration.

If there was one thing more than another about Atuntzu which had not altered, it was Mons. Gustave Peronne, the musk merchant. Men do come, and men do go, but he stays on for ever.

M. Peronne has spent the greater part of twenty years in Atuntzu, buying musk. How many beautiful women who buy expensive perfumes know, or care, that musk, which comes from Tibet, enters into the composition of all of them! The musk itself comes from the male musk-deer, an elusive little animal inhabiting wild country. It is hunted by the Tibetans, who sell the musk in China, whence it finds its way to Europe and America. It is expensive stuff even in Atuntzu. By the time it reaches Paris or London it is worth a small fortune. Though strongly scented, it is not itself used as a perfume, but is employed to fix other perfumes. M. Peronne told me that, owing to the uproar all over Chinese Tibet, he had not bought a pocket of musk for two years. Business was just beginning again—a sure sign that the troubles were over for

a time. In the summer of 1921 the outlook had been so bad that he went to Chamdo, half-way to Lhasa, to try and purchase a little musk there; but in eight months he had bought only a dozen pockets, so he returned to Atuntzu. He had a lot to tell me of the grandeur of the Tsarong scenery, however—a part of Tibet which is almost entirely unknown, full of snow-peaks, glaciers, forests, and rivers. It made one's mouth water to listen to him.

It was too early yet to think of starting for Burma, so I decided to go north and explore the Mekong-Salween divide in the neighbourhood of Tsakalo.

TABLE OF ALTITUDES

(YANGTZE-MEKONG DIVIDE)

| Station. | Barometer. | Thermometer. | Altitude (feet). |
|---|---|---|---|
| Pai-ma La[1]. . . . . | 19·3 | 56° F. | 15,000 |
| [1] Camp (Aug. 14) . . . . | 19·1 | 55° | |
| „ (Aug. 15) . . . . | 19·0 | 58° | 15,423 |
| „ (Aug. 16) . . . . | 19·1 | 45° | |
| Foot of glacier (north face of Tzaya) . . . . . | 18·9 | 49° | 15,661 |
| Glacier lake (below Tzaya) . | 19·1 | 48° | 15,374 |
| Glazier lake. . . . . | 18·7 | 50° | 15,952 |
| Highest point reached (on snowy range). . . . . | 18·2 | 43° | 16,682 |
| Highest point reached (limestone escarpment) . . . | 18·2 | 46° | 16,687 |

According to these altitudes, the natural tree-line on the Yangtze-Mekong divide stands at about 14,500 feet, and the snow-line at about 18,000 feet. Tzaya would be about 19,000 feet. Alpine plants are found up to about 17,500 feet.

[1] The altitude of the Pai-ma La is that accepted by Professor J. W. Gregory (see *Geographical Journal*, September, 1923).

## VI. SALT-WELLS AND DEAD GLACIERS

WE left Atuntzu on August 22. There is no need to describe the journey north through the Mekong gorges, but it was not without incident. We travelled by Adong, crossing the pass at the head of the Atuntzu Valley, and descending the steep wooded glen which leads down towards the Mekong. On the second day, the river being high, we were compelled to take the upper path which claws at the cliff face some 1,500 feet higher up. It never was meant for Chinese mules, with their wide pack-racks, but for Tibetan ponies, or donkeys, with the load tied directly on to the saddle. We were soon made aware of the fact by an accident. There was a projecting rock. The muleteers scented trouble, and stood by, while the mules filed past. Twelve had safely negotiated the dangerous bit, but the thirteenth and last caught it full, and was brought up staggering on the brink of beyond. It was one or the other —but not both if he could help it. Over he went; then with the adhesiveness of the Yunnan mule, he dug his hoofs into mother-earth, tautened his muscles, and very neatly tipped his load out of the saddle. Then he hopped back on to the path, shook himself, and started nibbling the bushes. But the load crashed and bounced down the precipi-

tous slope and was instantly lost to view; though I must say, as long as it was visible, it was a sight to laugh at.

Getting down the cliff was no easy matter, and we had to choose our route. After descending a hundred feet or so, signs of the calamity began to appear; for one box had been smashed to matchwood, and its contents—impaled on the bushes, or strewn down the slope—warned us that we were approaching the main casualty. Eventually, about 300 feet down, we came upon the load, caught up on a rock. The damage was less than might have been expected, as luckily, with the exception of one box, it was a 'soft' load, i.e. bedding, and practically everything was recovered and in time hoisted up on to the path. Meanwhile some of the men who had gone on with the mules returned, saying it was impossible to get along. I took the head muleteer (who, of course, had stayed behind to clear up the mess) with me, and went ahead to investigate. Alas! the report was correct—the narrow ledge, with its bulging cliffs above and terrifying precipices below, was impossible for Chinese mules—there was nothing for it but to return to the last village and try to engage local transport, either donkeys or porters.

So back we went, and arrived at the house where we had halted for lunch. However, the situation now brightened up. The village priest—he was a Moso from Likiang, who spoke a little Chinese—promised to find transport for the morrow, and said that in one day we should rejoin the main road.

The head muleteer beat one of his assistants

next morning, and that youth promptly took to his heels, following the road to Atuntzu. His master pursued him, with no great vigour. Two hours later they returned the best of friends.

The result of this *contretemps* was that we did not reach the main road that day. We started with the mules, and in half an hour reached the dangerous part. Here all the loads were untied, and the porters came into action. They had to carry my boxes one at a time up the steep hill to the village astride the spur, a distance of nearly a mile. Each trip to the top and back took an hour, and by the time mules and boxes were all reassembled at the summit, it was evening. So we stayed the night, and the headman took me to his house and treated me like a brother; or, at any rate, like a half-brother. On the following day we rejoined the main road.

Here the river swept round a huge cliff and the main road itself now climbed to dizzy heights, clinging once more to the face of the mountain. It was by no means the boulevard we had been led to expect. When, after two hours' toil, we at length reached the summit, my head muleteer turned to me and said, "My heart was a tiny little thing all the way!" meaning that he was sore afraid.

For the rest of that day the road was comparatively good, and towards evening we reached a large village in a deep mountain bay. From this point we had a fine view of the most northerly snow-peak of Ka-kar-po. The pilgrims' road, which crosses the snowy range by the Chu La, leaves the Mekong immediately opposite the village.

Between this peak and Damyon, which is the

next snowy peak to the north, a distance of perhaps 50 miles, I counted no less than five scattered snowy peaks, and several ' dead ' glaciers.

On August 26 we had a very pleasant march, keeping close to the river most of the time. The weather was beautiful, and, though hot, it was so dry in the gorge that we were not inconvenienced. Altitude about 8,000 feet.

I was astonished to find here on the limestone cliff, where a stream trickled down to form a small bog, a species of Primula. Apparently it belonged to the Nivalis group, but flowers there were none, and even the seeds had been long since scattered. It grew with maidenhair fern, Mentha, Equisetum, and a small orchid, amidst thickets of barberry bushes, always in boggy places, always where the water was limey. The strap-shaped leaves are somewhat fleshy, dark green above, brilliantly silvered below, and the plant sends out curious runners.

Our happy time continued for another half-day, and then came further trouble. After the midday halt we had to climb out of the trough. Once more we could see the path 1,500 feet above us, like a thread stretched across the face of the cliff.

About four o'clock in the afternoon we passed through a village high up on the spur ; it was too early to halt, though a heavy thunderstorm breaking over the valley at this time sorely tempted us to do so. However, another hour's marching would bring us to the next village, we thought. Five o'clock ! We were now high above the river, great cliffs rising above and below us. Ahead were more spurs, but no sign of cultivation. Six o'clock ! The country grew wilder yet. The friendly river

seemed a long way off, as well as fully 2,000 feet below us. Dusk came on—an early dusk, due to the gloomy clouds which swaddled the mountains; yet not so far to the north, as it appeared, we could plainly distinguish the three sharp peaks which overlook Tsakalo, now black against a patch of clear sky. Seven o'clock! Not a light to illuminate the rugged slopes; rocks and scrub on every hand —no water, even had there been space to pitch the tents. There was nothing for it but to push on ever more slowly. The path became worse, narrow and rocky, and we were fearful of an accident. However, the mules were well able to take care of themselves, trusting to scent as much as to sight, though how a well-developed sense of smell can keep one from falling over a cliff in the dark I do not know. At last, to our joy, we saw a solitary light in the distance, though whether it was near or far we could not tell.

Finally, after some trouble crossing a stream, we came to a house, and, making a lot of noise, demanded admittance. However, respectable people do not arrive at solitary Tibetan houses long after dark (it was now eight o'clock), and not only would no one open the door, but an old man abused us mercilessly from an upper window, adding insult to injury. I suppose he called us thieves and robbers, with appropriate qualifying adjectives, and advised us to go away. Meanwhile the men, prowling round the house, had found a ladder—a notched log, leaning against the wall—and by this we quickly gained a flat roof and thence jumped into the yard. The place was taken before the siege had begun—we were inside the defences. The old man, who

had a lot of women under his protection, was very aggressive at first; but as soon as I appeared he calmed down, opened the door, and became quite friendly. It was a poor home, but any shelter and warmth was preferable to the open—cold and wet as we were. My men slept on the roof, and I was given a sort of hen-house full of straw. The family lived, breathed, and had their being in an atmosphere of almost pure ammonia rising from the cattle-byre under the kitchen and living-room. You are recommended to try it in your bath. These good people did not know what a bath was, but they certainly tried it in everything else. It was too strong for me, though I dare say very healthy and germicidal.

Next day we resumed our march, but halted at a village early in the afternoon. We were still six hours' march from Tsakalo.

August 29, the eighth day since we left Atuntzu! The journey ought not to occupy more than five, or at most six days. In 1911, travelling with Tibetan animals, I had reached Atuntzu from Tsakalo in five days. However, here we were at last. We accomplished the last 60 *li* without a halt, crossing the border between Yunnan and Szechwan and descending to the village of Petin, where are situated the yamen, post office, and half a dozen miserable Chinese shops. The place is in ruins, a legacy of the fighting between Chinese and Tibetans. The energy of the Chinese (who are left in possession) is not equal to the task of removing the ruins and rebuilding the place, despite the fact that a company of soldiers are stationed there with nothing to do. Consequently, half the scanty population live in stys.

A deep ravine separates the semi-Chinese village of Petin from the Moso village of Yakalo, where the French Mission, a fortress-like building, occupies a commanding position.

The generic name for the district of the salt-wells, comprising seven villages on both sides of the river, is Tsakalo, a name known far and wide, which Yakalo, being only one of the smallest of the villages, is not. It is Yakalo, or Yerkalo, however, which is marked on maps. The Chinese call the place simply Yenching, 'salt-wells'; but, as there are dozens of Yenching in Szechwan, it is necessary to specify which one you are referring to.

I had scarcely reached Yakalo and taken up my abode, when Père Goré, the French priest, called on me and invited me to stay at the Mission—which I was delighted to do. He also secured me a Tibetan interpreter and all the transport animals I needed, either for local excursions or to go to Batang. The priest was to go to Batang in September, and I proposed to accompany him; but subsequent events made me cancel my trip.

Next day we visited the salt-wells in the bed of the Mekong. The actual wells, which are simply holes, 15 or 20 feet deep, into which men descend with buckets to scoop up the brine, were now under water, as the Mekong was in flood. What we saw were the drying terraces, a series of flat mud roofs supported on piles and built up the almost precipitous cliffs. The brine is poured out on to these terraces, the water evaporates, and the crystals—more or less white on the left bank of the river, but red on the right bank—are scraped up (together with plenty of dirt) and placed in sacks, ready for transport.

This Tsakalo salt supplies a good part of Western China, finding its way as far north as Batang and Litang, south to Wei-hsi, east to Chungtien, and west to Garthok in Tibet. It is the only business of the district which, but for this, would not support more than half the present population. As it is, quite 300 people find employment at the salt-wells —men, women, and children.

Just opposite Yakalo, across the Mekong, rises the snow-peak of Damyon,[1] the summit of which is visible from the French Mission. It has a local reputation as a sacred mountain, merit being acquired by marching round it. I decided to make it my first objective in the search for plants and glaciers (not merit), and on the last day of August we left Yakalo in splendid weather. I took only six mules, as we intended to be back in eight or ten days, and thus lightly equipped, we were able to travel more rapidly.

In order to reach Damyon, the snowy range between the Mekong River and independent Tibet, it was first of all necessary to cross the Mekong, by the rope bridge just below the salt-wells.

Twenty years ago General (then Major) Davies came to this rope bridge and, with his followers, tried to cross, proposing to find a route to India. But the monks of Lagong Monastery, insolently perched on the top of the cliff immediately above the bridge, came down and threw stones at them, with such effect that the enterprise had to be abandoned. Whereupon, as Davies ingenuously informs us, the monks became quite friendly, though not

[1] The name Damyon is probably of Moso origin; anyhow, it is neither Chinese nor Tibetan.

before he had hit one of them on the nose. To-day there is no monastery, only a few battered walls, an empty shell to mark the site; the arrogance of the lamas has been broken. The way of it was as follows.

In 1907 the lamas of Lagong revolted against China. The young commandant at Yakalo, instead of awaiting instructions from Peking (according to precedent), crossed the river at the head of his company, under the guns of the enemy so to speak, scaled the cliff, and put the lamas to flight. This prompt and gallant action had far-reaching results temporarily; for the frightened and disorganized Tibetans, fleeing into Tsarong, spread panic throughout that district, and the whole sub-prefecture submitted to China. The name of the young hero of this exploit, Ch'en, deserves to be remembered.

However, as usual, China having no clear-cut or continuous policy with regard to Tibet, the victory was thrown away and within less than a year Tsarong had reverted to Lhasa.

When Major Bailey passed this way on his journey to India in 1911, there was a small Chinese guard quartered in the ruined monastery, but I found it deserted.

In the interminable guerilla warfare between Chinese and Tibetans since the revolution, the monastery, despite the strength of its position, was totally destroyed by the Chinese soldiers somewhere about 1913. The Lhasa frontier now follows the crest of the range, though how long it will remain there no one can say.

It is an abrupt climb from the Mekong gorge to the crest of the ridge, over 3,000 feet above the river.

We spent the night at a small house close by the ruins of the monastery, and on the following day, September 1, started up the ravine which leads to Damyon. Almost immediately I came upon a fine form of *Primula pseudocapitata*, the latest flowering of all Chinese Primulas, in full bloom. The flowers are a rich cold violet, with a crimson glow in the centre. This is perhaps the finest of the Capitate Primulas.

Growing with it on the hard stony bank were a few stunted prickly poppies with purplish blue flowers and bright yellow anthers. The prickles were dusky purple, and the leaves sea-green.

There is a dearth of Rhododendron, and I remarked below only *Rh. decorum* and one of the 'Heliolopis' type—perhaps *Rh. brevistylum*. A little higher up in the forest were 30-foot-high trees of *Rh. Beesianum*.

Presently we entered the forest and matters became difficult, for the trail was encumbered with fallen tree-trunks. But worse was to come, for as we ascended we came to screes and moraines, where there was practically no trail at all. In the days of Tibetan ascendancy, merit was acquired by any lama who made the circuit of sacred Damyon. But the trail was not intended for mules, and beyond a certain point it was impossible to take them. It was now that I congratulated myself that the Yunnan muleteers had refused to go beyond Tsakalo; stout-hearted as the Yunnan mules are, they would never have climbed the screes as these Tibetan animals did. Part of the secret, at any rate, lay in the fact that the latter are not shod.

We halted for lunch at the upper limit of forest where a stream leaped some 200 feet over a cliff.

Huge screes, almost bare of vegetation, towered on either hand and were crowned by barer crags. Glaciers had once filled the valley, but now we were many miles from the foot of the nearest glacier. What had caused the ice to disappear? Was the climate warmer than formerly, or was the snowfall much less? Who could say! And in any case, again why? It must have taken several thousand years to melt all this ice! For here was a valley, perhaps 10 miles long and more than half a mile wide. Valleys from either flank had mingled their glassy rivers with that of the main valley, where the ice could not have been less than 100 feet thick. Think of the heat required to melt 14,000,000,000 cubic feet of ice—heat stolen from the atmosphere and made to work! But in addition to the ice in the main valley, there were glaciers in each lateral valley, all of which have melted away like snow in summer. All but one. In a high valley facing north, at about 17,000 feet above sea-level, I found a dying glacier—or rather a dead glacier. For it was but a corpse, a wraith crouching at the very top of the valley, hidden from sight. There was no snowfield to nourish it and keep it alive; in a few decades at most no vestige of it would remain; whereas in the case of the main Damyon glaciers, though they had retreated many miles and were still shrinking, they could never completely disappear unless Damyon itself fell down, since a peak of nearly 20,000 feet must always be snowbound.

That is an interesting fact. Dead glaciers! Could anything be more droll! A river without a source!

After lunch we continued up the alpine valley

over piles of boulders. Rain began to fall, cold, biting rain, and clouds swirled round us, hiding the peaks. We camped at 16,000 feet by a small lake, the highest point at which firewood could be obtained from the scrub Rhododendron. But the firewood was wet, and it was long ere we had a fire burning. However, on the following day the sun shone out and showed us to be in a rocky valley, the floor of which was occupied by a string of lakes, separated from each other by cliffs over which the streams, flowing from one to the other, cascaded. At the head of the valley, only a few miles distant, where a large lake lay at the foot of the cliffs, was Damyon itself, crowned with eternal snow. Not a thousand feet above the lake, but hidden behind a rampart of moraines which it had pushed forward even in retreat, was the glacier. With much toil we climbed the steep and slippery pile to its foot, and secured the first photograph of it, to prove once more that the glaciers in this part of the world are in full retreat, and that North-western Yunnan at least is indeed drying up, even if the earth is not—a fear which Professor Gregory was at some pains to allay a few years since.

We spent several days here, climbing to 17,000 feet, exploring and collecting plants; for on these ranges flowering plants are found at nearly 18,000 feet. In the spreading water at the heads of the valleys stood hundreds of plants of a Primula allied to *P. sinoplantaginea*, the dark purple capsules just showing their teeth in an autumnal grin; but the tightly packed seeds were still green.

Other species in fruit were *P. amabilis*, or maybe *P. minor*, with cylindric papery capsules; and

*P. sinonivalis*. None of these did I see in flower; but I gathered seed.

Large yellow poppies, with flowers 6 inches across (they were not now in bloom), grow at extreme altitudes. So too do the fat woolly pyramids of Saussurea. For the rest, a few yellow Saxifrages and blue gentians still bloomed in the alpine pastures, though winter was creeping down on them; for once, when we had climbed so high that not a living plant was to be seen, nothing but barren scree and flinty cliff, a stinging storm of sleet overtook us and drove us to shelter under the boulders.

On September 6 we returned to Lagong, and on the 7th ascended to the Pitu La. This is one of the main roads to Lhasa, as well as to many important places in South-eastern Tibet. After crossing the pass, one descends to the Wi-chu, or Yü-chu, a tributary of the Salween, whence the Salween itself is easily reached. I had visited the Wi-chu and crossed to the Salween in 1913.

The Pitu La is the lowest and easiest pass over the snowy range. It is but two days' march from Lagong to Pitu monastery, the pass scarcely exceeding 15,000 feet.[1] From the summit we had a good view of the snowy mountains on the other side of the Wi-chu, which were quite close. The snow-peaks themselves were cloud-capped, but I counted eight glaciers, only two of them of any size. Four were of the amœboid type common in this country—that is to say, they were situated on steep cliffs, and severed from the snowfields above. Of these, three, nevertheless, descended some way down the flank of the mountain, while the fourth remained

[1] According to Bailey, it is 15,209 feet.

suspended high up. Three large glaciers and one of the amœboid type discharged into a single deep valley. All of them were much crevassed, with steep broken falls, and their snouts were buried in earth.

If you travel north-westwards from Yakalo, you meet with snow-peaks at every turn, growing ever more lofty. There is a perfect botanist's paradise in that mountainous and little-known country beyond the sources of the Irrawaddy.

We found the Pitu La a very windy place for camp ; a boisterous breeze is ever blowing up from the hot, low-lying Salween gorge.

I climbed to another pass which overlooks the Mekong, but not a single glacier or snow-peak was visible in the east.

Near to the Pitu La a glacier had descended from the spiky divide, and had left, to mark the site, a small lake and a large moraine. On the west side, where the Di La, distant 2 miles, crosses the range, the slopes are smooth and gentle, and there is no sign of ice action, but rather of heavy snow-coverings.

There is a very typical dry alpine plant association above the tree-line here. It consists of a more or less continuous carpet of 'Lapponicum' Rhododendron (two species), Gaultheria, Cassiope, *Diapensia himalaica*, and juniper, with scattered gentians, Lloydia, and other flowers.

On September 9 we broke camp, and, travelling down quickly, crossed the Mekong next day and reached Yakalo, after an absence of eleven days. Père Goré was leaving for Batang on the following day, travelling light. An escort of five Chinese soldiers was considered necessary.

TABLE OF ALTITUDES (DAMYON)

| Station. | Barometer. | Thermometer. | Altitude (feet). |
|---|---|---|---|
| Pai-ma La . . . . . | 19·3 | 56° F. | 15,000 |
| Camp, Damyon (Aug. 31). . | 18·9 | 50° | 15,584 |
| ,, ,, (Sept. 1) . . | 19·0 | 50° | |
| Glacier lake (at foot of Damyon) . . . . . | 18·6 | 43° | 16,083 |
| Foot of Damyon glacier . . | 18·1 | 49° | 16,837 |
| Highest point reached on Damyon . . . . . | 18·0 | 40° | 16,972 |
| Upper limit of forest (in valley) | 19·9 | 57° | 14,073 |

*Note.*—In this and the preceding table, dealing with altitudes of over 15,000 feet, all heights are calculated with reference to the Pai-ma La, the accepted altitude of which is, in round numbers, 15,000 feet.

It will be observed that, according to these calculations, the Damyon glacier ends 1,176 feet above the Tzaya glacier; the former, however, faces south, whereas the latter faces north. The snow-line on Damyon is about 18,000 feet, it and the peak itself in the neighbourhood of 19,000 feet.

## VII. A HARASSED BORDER

SOON after Père Goré had started, we also were on the road again, following in his footsteps as far as the Chiangka River.

The road over the eastern range follows up a stream, and, passing through a magnificent limestone gorge, emerges into an open cultivated valley. Perched up on the cliff on one side is a small monastery, and facing it on the other, a nunnery. This approach to Tsakalo, which is of great natural strength, has been the scene of several encounters between Tibetans and Chinese; and two villages at the top of the valley, burnt by the former in the course of a raid, are in ruins. Here the forest began with scattered trees of Picea and bushes of a 'Fortunei' Rhododendron, like *Rh. decorum*. The path climbs a well-preserved moraine, more or less clothed with forest.

On September 12, in glorious weather, we climbed to the Kia La (14,894 feet). From the summit we had a superb view of the whole Damyon range to the north-west, and of the rocky snow-peaks above Pitu to the south-west. The dazzling white snow against the soft turquoise blue sky was wonderful. Northwards the view was very different; instead of the jagged sierra crests of the great divides, between which thunder the rivers of Tibet, the soft rounded

outlines of the grassland plateau. Here limestone and porphyry give place to a brick-red sandstone, which colours the Chiangka River. The summit was covered with clumps of dwarf 'Lapponicum' Rhododendron.

The descent to the Chiangka River, a tributary of the Yangtze, did not take long. We reached a village at night, and the river itself on the following day, immediately crossing to the left bank by a wooden cantilever bridge. The Chiangka River here, two miles above Tsongen, which is a village on the Batang road, was puny; in places one could almost have forded it at this season, and it was by no means winter yet. Though the current was swift, the water was absurdly shallow, and the stream nowhere more than 20 or 30 yards broad, dashing amongst large boulders and over rocky ledges. After following it westwards for a mile, we crossed to the right bank by a second bridge, just above a village, where the river turned sharply, now flowing from the north for a couple of miles. The gorge was well wooded. On the stony banks, amongst other interesting plants were an Incarvillea in fruit (K.W. 5404), a Hemerocallis (K.W. 5410), Himalayan Asphodel (Eremurus), and the cinnabar-coloured *Androsace coccinea*. The two former I did not see in flower, but one must suppose that the Hemerocallis has tawny orange lily-like flowers. Of its hardiness I am sceptical. Amongst a few rather scrubby trees and bushes, the most conspicuous was a weeping Euonymus.

In this part of the country, where the provisional treaty between Lhasa and China has been fixed since the armistice, many villages and houses are

destroyed. The armistice, it may be remarked, originally of a year's duration, is still in force by mutual consent. Meanwhile the country is given over to brigands, who prey on travellers. Against these free-lances, both sides appear to be impotent, and little or nothing is done to bring any of them to book. If robbery and murder are committed on the China side of the line, the brigands cross over into Lhasa territory for a time, and *vice versa*.

The people are friendly to strangers. Behold our arrival at a Tibetan house. "Arro," shouts 'Joseph,' my interpreter, and the good wife comes forward. Seeing me, she pulls down her queue (a mark of respect), spreads out her hands, bows and smiles. The *Chin-t'ang*, or family chapel, is swept and garnished, and there I repose. Later the headman himself arrives, puts out his tongue—also a mark of respect, not defiance—smiles and bows. He examines my property. Presently buttered tea is brewed in one of the tall wooden brass-bound churns, of which there are several in the spacious kitchen. The butter, more or less aged, is emulsified with the tea by means of a perforated wooden piston, which is vigorously worked up and down in the cylinder; a generous pinch of salt is added, and the clay-coloured liquid is poured frothing into wooden cups. Every one sits cross-legged on the floor round the fire, over which bubbles a huge cauldron. The kitchen is the chief room in the house—it is living-room, dining-room, and bedroom as well. Going to bed is a simple matter, as the people lie down on the floor, covering themselves with a rug or a couple of goatskins; a block of wood serves for a pillow.

There are plenty of other rooms in the house nevertheless, mostly store-rooms, padlocked and as sacred as Bluebeard's closet. The stables occupy the ground floor. On the roof is a shed for straw and grain. A chimney-like structure crowns the parapet, and here each morning green branches are burnt, sending a pillar of smoke up to heaven.

After travelling a few miles up the Chiangka River, we reached the village of Ru. The headman, with a large family, was living in a hovel. Hard by was all that remained of his mansion—four walls. He had assisted the Tibetans in the late war, and, when the provisional frontier was fixed a little beyond his village, the Chinese revenged themselves upon him in no gentle manner.

It is only two marches from here to Chiangka (Markam Gartok), an important centre in South-eastern Tibet. I had been there in 1911.

The Chiangka River flows some 3,000 feet above the Mekong, so it was no great climb from Ru to the Bi La, a pass above the latter river. On a limestone cliff above Ru were clumps of Primula in seed—probably the golden-flowered *P. pulvinata*, or the lilac *P. Dubernardiana*. At the summit was much grazing country, strewn with flowers in the summer-time—Primula, Pedicularis, gentians, saxifrages, Cyananthus, larkspur, and many more. Slopes facing the sun were very obviously clothed with oak forest, while those facing north were by contrast clothed with spruce, supporting an occasional larch. Hundreds of yak grazed in the pastures. We camped here for the night, and on September 15 descended directly to the Mekong, reaching Yakalo at eight o'clock at night, after a long march.

In going to Atuntzu, I had had it in mind, besides exploring some of the glaciers in that region, to continue northwards as far as Batang, thence to turn east and, following the main road by Litang, to travel to Tatsienlu, the 'gateway to Tibet,' as it is called. From Tatsienlu a corridor runs south through the Mantzu country to Muli, by which caravans can and do pass safely to and fro. Thus my idea was to make a complete circuit of the Mantzu area, returning to my starting-point at Likiang, and thence to Burma by the ordinary road.

However, Père Goré now informed me that it was very unlikely I should be able to travel the Tatsienlu road. Batang I could reach without serious difficulty. But Batang itself was almost isolated. No caravans—certainly no Chinese caravans—dared be seen on the road. The country to the north, even in the peaceful days, was notorious for robbers; now, with Tibet triumphant in the late war all along the line, and every province of China a militant debating society, brigands were rampant. They looted Chinese and Tibetans indifferently, but especially Chinese. There was no authority to cope with them. It was obvious, therefore, that I should get no one to accompany me through such a hornets' nest as hummed round Litang; and indeed it would have been folly to have attempted the journey. I therefore gave up the idea and decided to go as far as Batang before turning; then to come back to Atuntzu, travelling leisurely and exploring various glaciers *en route*. In the early winter I would return to Bhamo by the main road, reaching Burma before Christmas. This was my plan up to the middle

of September, a plan forced on me by ill-health throughout the summer.

And then, suddenly, I changed it. The climbing on Damyon day after day to 16,000 or 17,000 feet had done me good. Instead of feeling slack and ill, as I had for the last two months, I began to feel energetic again; and straightway I returned to my original plan—the first one of all, abandoned only on account of ill-health. This was to march westwards from the Mekong to the Salween and thence to the Taron, the most eastern of the four great streams which unite to form the 'Nmai kha, or eastern branch of the Irrawaddy. From the Taron I would try to make my way south-westwards to Hkamti Long, on the western branch of the Irrawaddy. I had long had such a journey in mind; indeed, some years ago I had attempted to carry it out, but, starting too late in the year, had been foiled at the Salween by snow on the passes.

For this purpose it was necessary to reach Tzuku on the Mekong, below Atuntzu, early in October, so as to be ready to start as soon as the fine autumn weather began. The passes westwards from the Mekong are open as a rule up to the middle of January, though they are liable to be blocked by snowstorms for a few days at a time. Soon after the New Year, however, they are permanently closed and the upper Salween Valley is completely isolated for five or six months. October is not the best month to make the passage, because, if the rainy season happens to be prolonged, snow falls at 15,000 feet in the autumn, and the passes may be covered with deep drifts of soft snow. The November sunshine, however, melts it again.

We left Yakalo on September 22, crossing to the right bank by the rope bridge and following the river south. In this part of the gorge the road on the right bank, though not the main road, is the better, as there are not so many spurs and ravines to be crossed. It is too narrow for loads as carried on the bulky Chinese pack-saddles, but our Tibetan animals got along all right. We made good progress, and, marching an average of six hours a day, were opposite Atuntzu on the seventh day.

The Tibetans on this side of the river are rather cut off from intercourse with the outer world, as the caravans pass them by on the other side. I was asked for medicine, soap (by a young maiden), looking-glasses, and such-like articles, some of which I was able to supply. Autumn is the season of pilgrims and of itinerant players in this country. The former make the circuit of the snow mountains, which are more than locally famous; the latter, dancers mostly, perform from village to village. There is also an extensive floating population of petty traders, who are now seen on the road making buttered tea beneath the shelter of their black cloth tents, their donkeys grazing near by. All these people, and many others, we met: Tibetan caravans from far away, the men muffled up in their greatcoats, the women in strange garb with their hair done in yet stranger fashion; pedlars with donkeys and packs on their backs; medicine men; sorcerers, lamas, all the curious people of this curious land.

We now paid a visit to a temple, built on the brink of a great precipice, at the foot of which the largest of the glaciers from sacred Ka-kar-po writhed

in frozen torment. Perched up on the cliff opposite were three small hanging glaciers.

We spent a pleasant day at the temple, while pilgrims plodded round and round it, turning the big prayer-drums, and monotonously mumbling the magic prayer. However, there seems to be more in mere repetition than meets the eye, for are not tens of thousands of people in Europe murmuring to themselves twenty times morning and evening the prayer or formula, "Every day in every way, I am getting better and better"? The lamas seem to have discovered the merit of this performance before M. Coué. We are slow to learn, but no doubt we shall better our instructors! though the Buddhists repeat their *mani* 20,000 times a day, including, of course, repetition by proxy with aid of prayer-drums, prayer-flags, and such-like adventitious aid.

In the course of a climb to the hermit's cave above the temple, I found bushes of *Rh. pagophilum* (K.W. 5414), a glabrous smooth-leafed shrub, in fruit. There were also small trees of a 'Neriiflorum' (K.W. 5415) with compact trusses of eight to twelve ovoid capsules on very short stalks. The only other species I noticed in this glacier gorge were a glaucous-leafed bush, probably *Rh. oreotrephes*; a dwarf species, probably *Rh. saluenense*; and, lower down, *Rh. yunnanense* and *Rh. decorum*.

*Primula pseudocapitata* was also in flower here, its violet mops glimmering amongst the dead grasses.

On September 30 we returned to the Mekong, and on the following day crossed the river and, after a long march, reached Atuntzu at eight o'clock in the evening.

I spent four days there, and it rained nearly all

the time, the mountains being blanketed in cloud. This did not look very hopeful for an early start, as by this time snow was beginning to fall at higher altitudes.

It was not till we returned to Atuntzu that we heard of the new civil war in Szechwan, though the trouble was a long way from where we had been. There were also wild—albeit official—rumours of serious trouble in Europe, but this was so startling as to be incredible. Neither M. Peronne nor I had any news. The Chinese posts, in Yunnan, at any rate, are extremely unreliable. When one considers that letters go from London to Bhamo in about four weeks, and that they take six weeks from Bhamo to Atuntzu, one suspects lack of organization somewhere. But this is not the worst feature. Far too frequently letters, even when fully directed in Chinese, are sent to the wrong place ; and, worst of all, many letters are lost. Illustrated papers, addressed to Europeans in the interior, have a peculiar way of disappearing, swallowed up in the vastness of China ; but, of course, illustrated papers appeal to Chinamen as much as to Europeans, and the Yunnanese are nothing if not communists. On September 22 I received a letter in Yakalo posted in London on April 27. It had been sent to most of the mission stations in North-west Yunnan. Except for this waif, I had had no letters for four months, because of the uncertainty of my movements ; nevertheless, I was thankful that my mails were safely held up in Rangoon, instead of being pitched about in this country at the mercy of somnolent and indifferent Chinese clerks.

On October 6 we left Atuntzu for the last time,

marched down the stony valley, and by evening reached the Mekong once more. Two long marches of over seven hours each brought us to a point opposite Tzuku ; but the road here is much easier than it is in the arid regions further north, and keeps close to the river all the time. There are no terrific and appalling cliffs to climb, though the path is often narrow enough in the short gorges through which the river suddenly breaks. Villages are more frequent, and trees grow right down to the water's edge. Entering the gorge above Tzuku, we found ourselves in more wooded country, and there were masses of orchids on the rock-slabs.

Crossing once more to the right bank, we were welcomed and hospitably entertained at the French Mission by Père Ouvrard. Like other stations of the Tibet Mission, that of Tzuku has been mercilessly persecuted ; but always it has risen again from the ashes. In the rebellion of 1905 it was burnt to the ground, and both the fathers—there were two in those days—were murdered. In 1914 another of the fathers, while on a journey to Tatsienlu, was murdered. And so it goes on. Now, there is a fine church at Tzuku and a school. Père Ouvrard is priest, doctor, lawyer, indeed everything, to his converts, who number several hundred. These people, though Tibetan (a few are Moso), are not under the priestly rule of Lhasa, nor do they wish to be. They are under the ægis of Yunnan, and for self-supporting village communities it is better to be the subjects of a government which does nothing than under one which is for ever oppressing the people.

It is interesting to note that the world-wide

influenza epidemic reached even to Tzuku. Typhoid and smallpox also scourge these unfortunate people, and they suffer much from leprosy. The lepers, far from being isolated, continue to live with their families. They appreciate the blessings of vaccination, and flock to Père Ouvrard for inoculation.

I spent three days at Tzuku, making final preparations for my journey. The rain had ceased and the fine weather was setting in, though clouds were still blowing over from the Irrawaddy. To reach the Salween was simple enough. It was after that that the trouble began. I had to carry supplies for fifteen or twenty days, as in the dense jungles beyond the Salween one could not rely on getting anything to eat. Rice, *tsamba*, and a supply of chocolate were what I intended to rely on chiefly, with tea and butter. These, with a few necessary cooking-pots and odds and ends, reduced to a minimum, made up two loads. My bedding, warm clothes, a few indispensable books, maps, etc., made two more. I carried also a collecting-box with accessories, for specimens, a botanical press for my plant collection, camera, field-glasses, and several hundred rupees in silver. In all, loads for seven men which, by jettisoning a number of things, could be reduced to six—and, when food became available *en route*, to five.

My chief difficulty was to find an interpreter to accompany me the whole way. By the time we reached Hkamti Long the passes to the Salween would be snow-bound, and he would not be able to return to his home by the way we had come. It would be necessary for him to go all the way round by Bhamo, Tengyueh, Tali, and the Mekong

Valley. Then, on the other hand, by the time he got back to Tzuku the passes to the Salween from that side also would be closed, and he would have to sojourn at Tzuku for two or three months, cut off from his home till June. The best thing would, of course, be to take an interpreter from the Mekong ; but the Tibetans of the Mekong do not go to the Taron, and a Chinese-speaking Tibetan who knows the Kiutzu tongue is a rarity indeed.

There was a most amusing Chinaman who hung round the Mission a good deal, a ragged rascal who, when he heard of my proposed journey, sat round the charcoal fire with us one night and made our blood curdle with his stories of adventure. He had been with the Chinese expedition to Hkamti Long in 1906 as a coolie, and had suffered accordingly. Not for anything would he go again, and he kept repeating, " I'm scared ! I'm scared ! " He spoke vaguely of mountains and rivers, of rain and leeches —for they had crossed the country in the summer ; he told me to abandon my proposed route and to go by the one they had followed, though there seemed to be nothing to recommend it. " There's no road," he said when I told him I intended to cross from Tramutang. " I should be scared ! "

This fellow was quite deaf in one ear. He had been a soldier during the late war (the Tibetan war, not the European war), and had one day fired his rifle—with unfortunate results for him. He had been deaf ever since.

I was much struck by the very different attitude of the French priests towards the native, as compared with the Protestant missionaries. The former live much more with the people, and thus enter more

intimately into their lives. The Mission at Tzuku was a sort of wonder-house wherein anyone who liked could enter free. Père Ouvrard kept open house as it were. At meal-times there was generally a small crowd of dirty sightseers, with whom the father kept up a running conversation of banter. In the evening one or two would generally sit round the *hop'an* with us, and make themselves useful fetching coffee, matches, or what not. Volunteers to wait at table or to fetch and carry were never lacking; they came out of curiosity, a different one each day. An English missionary would demand privacy at meal-times, at any rate; not so these patient priests. Indeed, Père Ouvrard was always accessible to his flock. One result of this intimacy is that the Catholics are far more successful than the Protestants; for every convert of the latter, the former can boast of ten. I know not whether it is a question of method, or of what they teach, but my experience, and that of others in Yunnan, has been that while the native Christian from the Protestant Mission is almost invariably a rascal, the Catholic is usually steady and reliable, as well as capable. He may be a rascal to others; but at least he is honest with his employer.

One naturally turns to the missionaries in the interior to find servants, and especially a cook. But it is a mistaken policy. Well-cooked Chinese food is infinitely preferable to badly-cooked European food, as I have often had to inform my cook. Sometimes, when a particularly horrible-looking meal has been set before me, I have wished that I could treat my cook as the great Chao-Erh feng treated his. The story goes that this iron man,

when on his victorious campaign against the Mantzu a dozen years ago, silent, stoical, heeding neither cold nor heat, ate whatever food his cook put before him. His cook, in harassing circumstances, seems to have given him some queer dishes. At last, on an unfortunate occasion, there being presumably nothing else, the cook gave him a roast rat to eat with his rice. Still the general said nothing. Instead, he acted—and straightway beheaded his cook!

What a country this is! The mandarins rob the people, the people rob each other; but especially do the people rob the foreigner. When engaging servants, muleteers, or in fact anyone at all, it is essential to have a guarantee bond, backed by some merchant of standing; and even then the employee will rob you or break his contract if he sees half a chance of doing it with impunity. Opium is planted all over the province, and there are few, indeed, who are not slaves to the drug. The people pay taxes, but they get nothing in return for them. Apparently, they do not care. Civil war flares up here, there, everywhere. Trade is stagnating. Poor China! One wonders how it will all end. It is a bad outlook when her delegates to the Washington Conference ask other Powers to grant her that justice which she denies to her own people. As for their perpetual whine that China is a young republic and needs only time, and to be let alone, it is simply farcical. In the same breath the mandarins tell you that China was civilized when Britons were dyeing themselves with woad and running about in skins. If China had, as she claims, learnt everything two or three thousand years ago, she has certainly learnt nothing since. Nor is it germane

to the question of present efficiency to be told that China was great in literature and art and government a thousand years ago. The fact that Egypt or Babylon was great thousands of years ago does not help the people of those fallen empires to-day.

Only a dozen years ago China was united and comparatively well governed. Why? Not because the Emperor was on the throne, but because the Manchu was a more efficient official than is the Chinaman. To-day there is hardly a merchant in Yunnan who does not sigh for the return of the Imperial Court to Peking; not that he understands the difference between autocracy and so-called republican government, but because he does understand the difference between order and chaos. China must mend her ways or go under; the writing is on the wall.

Governments, whether oligarchies or republican (and, by the way, there are republican as well as imperial oligarchies) are composed of people, and if the people are rotten, the government can scarcely be good.

A government of whatever kind is ultimately made up of people, and if the people are dishonest, nothing in the world will make the government honest. If the people are honest, the government will be less honest, though not necessarily dishonest. It is entirely a question of method and organization. The Chinaman is no more inherently dishonest than any other human being. Bribery and corruption are not unknown in Western countries. The vigilance of an army of inspectors is required to prevent theft and peculation, and, even under the fierce light of publicity, graft stalks abroad. But public

opinion and sanctions keep it within bounds, and ruthlessly expose it. Scorn kills it.

But to return to my preparation. The heavy baggage was to be sent down to Tali in charge of my cook, whence it could be forwarded to Bhamo. Père Ouvrard engaged mules for me for the journey, which saved the bother of changing transport at Wei-hsi. Seven Tibetan porters were hired for the journey to Bahang in the Salween Valley, where resided another French father. My cook was to accompany me for the three days' journey to Bahang, as a sort of supporting party, and return with the porters to Tzuku. After that I would have to cook my own meals, and, what was worse, eat them; but as I should live chiefly on rice, *tsamba*, and maize, no great difficulty was anticipated.

TABLE OF ALTITUDES

| Station. | Barometer. | Thermometer. | Altitude (feet). |
|---|---|---|---|
| Atuntzu | 21·7 | 55° F. | 10,800 |
| Yakalo (Catholic Mission) | 23·3 | 70° | 8,771 |
| Lagong | 21·3<br>21·4 | 63°<br>55° | 11,254 |
| Bi La (above Yakalo) | 19·9 | 55° | 13,342 |
| Chiangka River (at Ru) | 21·8 | 63° | 10,622 |
| Mekong (Yakalo) | 24·3 | 83° | 7,540 |
| ,, (opposite Atuntzu) | 25·3 | 71° | 6,458 |
| ,, (Tzuku) | 25·8 | 74° | 5,914 |

The distance between Yakalo and Tzuku is about 74 miles, giving a fall of 22 feet per mile for the Mekong.

Note that the Chiangka River at Ru flows nearly 3,000 feet above the Mekong. The former flows into the Yangtze, which itself is about 1,500 feet above the Mekong.

## VIII. THROUGH THE VALLEY OF HAIL TO BAHANG

ON October 12 the seven Tibetan porters, who had been engaged to take me to the Salween, assembled at the French Mission. The mules, which would carry my heavy kit down to Tali, were not available for a week, therefore my Szechwanese cook, who had been placed in charge as the reward of faithful service, was free to accompany me as far as the Salween or (rather the French Mission at Bahang) and return to Tzuku in time to go south with the mules. Joseph, my Tibetan interpreter, being of no further use, returned to Yakalo with the muleteers who had brought me down the Mekong. Finally, my Likiang " boy," who neither desired, nor was required, to accompany me to the Salween, was sent back to his home. He had the typical haggard look of the hardened opium-smoker, and during the last month had been more than usually slovenly—either from over-indulgence in the drug, or for lack of it. It would have been sheer cruelty to take him, so I paid him off. We parted with mutual expressions of good-will, and he went away amiably enough, well contented with things as they were.

The morning was brilliant—not a cloud dulled the sky. Everything looked well.

It was ten o'clock when, after a hearty breakfast, I

left the hospitable Mission. Père Ouvrard walked along the path with me as far as the big torrent which we must trace to its source in the Si La. Just above the torrent is Ganton's house, so in we went to drink milk.

Ganton is a Tibetan who speaks all languages. He had been my guide and interpreter in 1911, and though he was getting old now, and going blind, never had he been more cheerful. We exchanged reminiscences. "Ganton, do you remember the Tibetan mastiff you got for me, when we went to Menkung?" "Sir, where are you going this time?" "To the Taron; will you come with me?" "Yes, if you like!" But the good-natured Tibetan could not accompany me because he was about to transfer his household to another village. Moreover, if he accompanied me to Hkamti Long—and no lesser distance would be of much assistance—it would be months before he could see his family again.

Père Ouvrard now left me to return to his duties, and we set out on our journey. The Mekong here flows at an altitude of about 6,000 feet—a good thousand feet below the level of the Yangtze, on the other side of the high range to the east. This is an important fact to bear in mind, because, as we shall see presently, the rivers flow at lower and lower elevations as we go westwards.

Now came a very hard climb up the pine-clad flank of the range. There is much scrub here—oak, bracken, and *Rhododendron decorum*, with many other bushes. Here and there was seen meagre cultivation, but so steep is the mountain and so stony the soil that the earth yields a bare subsist-

ence. At the highest village we halted for lunch. The sky had clouded over and a cold wind was blowing.

Leaving Nya-pa-teng, as the village is called, an hour's climbing brought us to the Tra-na La, which crosses a spur—one of those great rock buttresses which shore up the snow-peaks behind.

We had already climbed 4,000 feet. To the east, stretching north as far as the eye could follow, rose the ice-worn Mekong-Yangtze divide; in the distance we could just recognize the snow-clad peaks of the Pai-ma-shan group.

From the Tra-na La we descended by a steep and muddy path to the upper course of the torrent. Magnificent mixed forest filled the narrow valley. The outer slope of the spur, exposed to the suck and scourge of the Mekong gale, can support only pine forest; but on the inner side ample protection is afforded. Big yew trees, maple, birch, Magnolia, mountain ash, and *Rhododendron niphargum* made up the bulk of the tree-growth. Towering above all are scattered Pseudotsuga trees of great girth and upwards of 100 feet high.

In early spring before the snow has melted, the forest is a tossing ocean of green combers, dabbled with a surf of Rhododendron foaming into blossom. Now the only colour was that afforded by the autumn tints of rowan and maple, which chequered the forest with russet, chrome, cadmium, and saffron-yellow; and, where vines hung in festoons from the trees with scarlet.

Though the forest trees suggested a climate as cold as that of England, we brushed through a dense undergrowth of delicate ferns, including maiden-

hair; lilies, including *L. giganteum* 10 feet high; Strobilanthes, Impatiens, Begonia, and cuckoo-pint; with bushes of Helwingia, Euonymus, barberry, and holly.

That night we camped in the forest some miles short of our full stage, for we had started late. At six o'clock next morning, when we rose, a thin film of hoar-frost covered the leaves in the open, but under the trees the minimum thermometer registered 37° F.

We had a long and strenuous climb before us. At first our path lay through the forest, the leaves fluttering down all round us. Then we ascended to the rank meadows above, climbing abruptly from terrace to terrace. The rocks here were smooth, and pools of water lay in shallow basins surrounded by bushes. The whole valley was glaciated, but the glaciers had disappeared. Everywhere grew Rhododendrons, trees, shrubs, bushes, and finally little creeping plants. *Rh. sanguineum* sprawled over the granite floor; bushes belonging to the 'Heliolepis' and 'Campylocarpum' sections were abundant. I counted fourteen species in the course of the day's march.

We had lunch on one of the wide platforms where the now shrunken stream flowed less fiercely. The sky had clouded over and a cold wind rattled the skeletons of the meadow flowers. It was rather dismal.

At the head of the cwm, now quite close, rose the high wall of the divide. We must cross it before dark somehow; but there seemed to be no possible way up it. Viewed from here, it was a sheer precipice, at least 2,000 feet high, all the way round.

But as you approach the foot of a mountain, difficulties have a way of melting into the *ewigkeit*, just as hidden difficulties reveal themselves. Gullies and chimneys, previously invisible, open under your very eyes; paths zigzag up the steepest rock face and stick closely to the most hideous precipice; anyhow, the path was there.

Tramping over wide, level slabs of rock, and through peat-bogs with spongy moss-beds between, we reached the foot of the cliff. In the deep stream-bed at one place lay a huge cake of last year's snow; the water had tunnelled a passage beneath it.

So far we might have brought mules—with difficulty. At least, there were no insuperable obstacles. But no laden mule could climb this barrier. The ascent of the cliff, though taken on a long slant, was hard work—especially for the porters. Thank Heaven there was no snow! I had twice previously crossed the Si La, once in June and once in November, and on both occasions we had floundered through deep, soft snow. That was bad enough in itself; but, worse still, it hid the path, never very easy to follow. Now, however, we had no difficulty. It was a toil, but nothing more. The porters went very slowly, frequently halting to get their breath, so I had plenty of time to collect seeds of the wonderful alpine plants which clothe the rocks. There are tiny Primulas and dwarf Rhododendrons creeping over the rocks just like ivy; lilies, saxifrages, gentians, lousewort, Geranium, Aster, Lloydia, Cremanthodium, and many other flowers. I had caught them just at the right moment, for the wind was agitating the resilient capsules, and at each blast

they strewed the ground with their dust-like seeds. Flowers, of course, there were none at this altitude, though we had seen a few lingering on by the stream at the foot of the cliff. They looked cold and unhappy, as well they might; even the autumn flowering gentians looked pinched.

We reached the pass at four o'clock, the ascent of the cliff having taken nearly two hours. Here we encountered a fresh breeze blowing up from the Salween, and bitterly cold it was. A powdering of snow whitened the peaks, and a crisp layer glazed the pass itself and the steep slope below. The Si La is 7,519 feet above the Mekong, or about 13,500 feet.[1] The view westward is blocked by a huge spur, but the crest of the Yangtze divide is visible beyond the wooded valley by which we had ascended.

I did not remain at the summit longer than was necessary to make a few observations and collect some Primula seeds. Hands and feet were numb with cold. Below us—far below us—lay the Serwa Lungba, the 'valley of hail,' which is a narrow and extraordinarily deep trench. It was originally ploughed out by glaciers, the work being completed by water.

The descent from the Si La into this trough is as steep as a house-roof. The slope, however, is covered with grass and alpine flowers, with little rock exposed, thereby differing from the sheltered flank by which we had ascended. The flora, too, differed in sympathy, reflecting the contrast in conditions. There were no Rhododendrons on this side until we were a long way down. On the other

[1] According to Gregory, 13,968 feet.

hand, there were clumps of blue poppy, whose cowl-like capsules were full of beady black seeds. This slope faces south-west, hence the winter snow melts earlier here than on the rocky flank, where it lies till the end of June. The lash of the rain, blowing up from the Salween, also falls more heavily on the west side; and, of course, it receives more direct sunlight. These factors, apparently trivial, are sufficient to weigh down the balance, and account for the obvious difference in the alpine flora on the two faces. Down below in the valley their effect is lost, and the same plants are met with on both sides.

The descent to the Serwa Lungba by a zigzag path in the teeth of a bitter wind was horrid. However, we reached the stream below at last, and proceeded a few miles down the valley. This stream comes from a tarn, an old glacier lake, which we could just see gleaming jade-green, higher up; it flows directly to the Salween, but does not offer a convenient route to that river. On the morrow we would have to climb the next range to the west, a spur of the main divide, almost as lofty as the Si La itself.

Lining the stream in the 'valley of hail' were quite a number of flowers. At one point the bank was golden with Trollius—a large buttercup. The odd-looking lemon and orange-striped primrose (*Primula serratifolia*) was still in bloom, and a third startling yellow was supplied by a species of Potentilla with gamboge-coloured flowers.

At dusk we halted under the trees. Supper was soon cooked and we turned in early, tired after the long march. The altitude was about 12,000 feet,

so it was fairly cold; but though it froze sharply in the open, we were, to some extent, protected by the trees, and the minimum thermometer still registered one degree above freezing-point.

October 14 dawned as clear as the previous days had done. Before seven o'clock the peaks all round were brightly gilded; the warm tide of amber light crept slowly down the forested slope, kissing the frost from the fir trees. But it would be long ere it reached the bottom of the valley.

Many honeysuckle trees grew here, and flocks of small birds were busy quarrelling over the scarlet berries. Some trees were already stripped of fruit. On the other hand, birds do not appear to eat the very attractive-looking scarlet fruits of the many Arisæmas met with. The ripe spadix usually collapses, and the fruits lie in a mush on the ground till the pulp rots away, leaving the seeds to germinate. I never saw a bird go for them. If a fruit, however attractive to birds, is unpalatable, or poisonous, it will be let alone. Mere coloration by itself is no proof of seed dispersal by birds.

While the men were packing up, I had time to look about me. The valley was, as already stated, deep and narrow; the jagged spurs which enclosed it were sheer. Their flanks streamed water which, borne in lofty hanging valleys, slid noiselessly down the cliff, or leapt wildly from ledge to ledge.

The stream, which rises at the Londre La, a pass a few miles north of the Si La, flowed away to the south-south-west, so that, even supposing there had been a path, we should have reached the Salween many miles below Tramutang (our destination),

had we followed it. Instead, we crossed the stream and climbed the spur facing us. As usual, the path was abominably steep—as steep as an ordinary flight of stairs, without the advantage of the steps.

Here grew thickets of bamboo, brambles, and giant herbs 7 feet high; Polygonum, Astilbe, Thalictrum, Rodgersia, Strobilanthes, and Aconitum. Out of the tangle appeared birch trees, whose tattered bark flapped dismally in the wind; while from every branch and twig hung long streamers of pale green lichen, which swayed to and fro like seaweed in a tideway.

The pass lay some distance down the ridge, where it was lower; and, after the first abrupt climb, we were able to approach it on a slant. Here the grade was easier. Stout bushes of Rhododendron, and clipped fir trees, clothed the upper part of the ridge; but there were patches of open boggy meadow, and shallow ponds, where trees would not grow. This is the *locus classicus* of that queer Primula, *P. Franchetii*; nor, indeed, has it ever been found anywhere else.

About midday we reached the pass, a mere notch in the razor-backed ridge, called Nyi-ser-ri-go. It means the 'top of the mountain of yellow bamboo.' All that. The yellow bamboo is not a conspicuous feature. Indeed, I saw none, unless the bamboo at the foot of the ridge could be called yellow. The pass is about 500 feet lower than the Si La, so we had climbed a mere thousand feet from camp; but the steepness of the mountain made it appear more.

From the Nyi-ser-ri-go there is an extensive view

westwards. Below is seen the comparatively broad Salween Valley, bowl-shaped in section, but the marble gorge whence the Salween itself issues is invisible. Where the curve of the vale is broken by a limestone scarp, from whose foot a long incline slopes gently to the river, is seen a white spot. That is the monastery of Tramutang. Behind, the rocky Taron divide, culminating in the great snow-peak of Gompa La, fills the horizon. It was already plain that the entire range had been heavily glaciated, though the Gompa La is the last, most southerly snow-peak on this divide, while it is necessary to go some miles north before another is reached. Thus the Gompa La is an isolated peak, and cannot now be compared with the Ka-kar-po range to the east. Immediately beneath us a grassy shoulder plunged down to a deeply eroded valley, separated again from the Salween by a high ridge. This stream, rising near the Londre La, flowed south-south-west, parallel to the one we had just quitted, and separated from it by the spur on which we stood; just before entering the Salween these two streams unite.

It may be noted that the Si La crosses the Mekong-Salween divide between two snowy ranges, the Ka-kar-po range to the north, and a nameless and unexplored group of peaks near Hsiao-wei-hsi to the south, the glaciated portion of the range between the two being about 75 miles. Within that distance are four passes to the Salween, named, from north to south, Do-kar La, Londre La, Si La, and Latsa La.

Thus, after crossing the main divide, instead of descending straight to the Salween, we had to cross

a succession of high spurs and deep valleys. This is due to the fact that, for long distances, the larger tributary streams flow parallel to the main river—a peculiarity characteristic of the country we are dealing with; and the further west we go, the more pronounced it becomes. The summit of the Gompa La was unfortunately muffled in cloud, but the great glacier on the east face was clearly visible. As a matter of fact, there are three distinct glaciers. Two of them coalesce below; the third lies in a separate valley, but discharges over a cliff into the same valley as the other two. From these is derived the roaring, raving torrent which crashes into the Salween above the marble gorge. Yet another glacier appears to flow northwards, but of this I could not be sure.

A little to the south of the snow-peak, the pass to the Taron was visible. It lay at the head of an apparently barren, rocky valley at an altitude of about 13,000 feet. On the far side of that inhospitable-looking range lay the North-East Frontier of Burma. It was not, perhaps, very far as the crow is alleged to fly; but it would take a long time if the crow went on foot.

High and difficult as this barrier is, there are no less than four routes to the Taron within hail of Tramutang. The most southerly is a path from Bibili, a village about 10 miles south of Tramutang. The next is a route from the village of Choton, which stands opposite to Chiora, where the ferry plies to and fro. The third is a path up the ravine in the cliff, behind the monastery of Tramutang itself; and the fourth is the route we followed, above the marble gorge. The last two routes, though they

cross the divide by separate passes, join up immediately after.

Going still further south, there is the Yuragan Pass, about 10 miles below Bibili, the same pass being also accessible from the important village of Sukin, a few miles down-stream from Yuragan. Three marches below Sukin is Latsa fort—now abandoned, and three marches below that again is Sha-pa post. The Salween, south of Latsa, as far as Lanchiati, a distance of 70 miles in an air-line, is unexplored.

South of Sukin, however, the passes lead, not to the Taron, but by devious ways into the Ahkyang Valley—the Ahkyang being a large tributary of the Taron, or, as it is by this time, the 'Nmai kha.

North of the marble gorge there is no way out of the Salween trench till the upper end of the granite gorge is reached at Trenge, 20 miles beyond. From Trenge a big road crosses the divide to the Mumbli wang, a tributary of the Taron.

Having finished my inspection of the Gompa La, we started on the final descent to Bahang. Passing through a strip of forest, lined with the dead haulms of a 'Nivalis' Primula, we emerged on to an open grassy slope where clumps of dwarf 'Lapponicum' Rhododendron grew patchily, and presently halted for lunch by a spring.

The snowstorm, which was frisking about on the Gompa La, now lightly leapt the valley, and precipitated itself on us in a deluge of rain. This is the usual greeting the Salween has for the traveller. However, it was only a shower after all, and presently the sun was shining, while the clouds rapidly dispersed.

Coming down to lower levels, we found the slope

covered with bracken and tall herbs, amongst which were scattered oak, pine, and alder trees, forming a sort of open park. Soon the white church came into view, and at four o'clock we reached Bahang. Here I was warmly welcomed by Père André and invited to stay at the Mission.

## IX. THE START FOR THE TARON

BAHANG is a Lutzu village of the usual type. There may be twenty or more huts included in the name, a hut here and a hut there ; but they are not, as a rule, within shouting distance of each other, and frequently not even within view. It may take an hour to get from one hut to another half a mile distant on the next spur, but separated from it by a ravine. This arrangement, of course, arises partly from the difficulty of cultivating the steep slope, and partly owing to the distribution of accessible water. In this low-lying valley, with its heavy monsoon rainfall, the streams tear deep rents in the flanks of the mountains. These become filled with a dense growth of semi-tropical forest, fenced in by an impenetrable screen of bamboo ; consequently, such streams are almost inaccessible.

The huts, however, are perched up on the intervening spurs, which are covered with grass and bracken, and with a park-like formation of scattered trees. Here alone cultivation is possible—and not very much at that.

The Catholic Mission itself stands on a spur about 1,500 feet above the stream, and 3,178 feet above the Salween ; consequently it is never uncomfortably hot, and at this season the climate was

delightful. Three or four Lutzu huts share the same knoll. My host, Père André, was a newcomer. He had been a soldier and had fought in the trenches throughout the war, at Verdun and elsewhere. With quiet pride he showed me his Croix de Guerre.

Tibetan he spoke with fair ease, but he was only just learning Lutzu, and he described it to me as being about as musical as the barking of a dog—and as difficult to imitate. However, he willingly consented to try and engage seven porters to accompany me to the Taron, and an interpreter to go as far as Hkamti Long. He held out small hope of the latter, however. There was one insuperable difficulty, which money could not overcome: a journey from the Salween to Hkamti Long at this season meant being cut off from any hope of return for over six months. After November, the passes on *both* sides of the Salween are closed till June. Those on the west, or Irrawaddy side, suffer most; the snowfall is heaviest here, and the passes are difficult at the best of times—to return from Hkamti Long by the same route would be impossible. There remained only the long journey *via* Bhamo and Yunnan to the Mekong. By the time Tzuku was reached, even in the mildest of winters, the lowest and easiest pass—the Londre La, which is not much over 12,000 feet—would also be impassable. There was, therefore, little hope of my securing an interpreter, and I would have to get along as best I could without.

Besides, I required a Chinaman, or else a Tibetan, who could speak both Chinese and Lutzu—a rare combination. How I wished Ganton were available!

The next day was Sunday. Very early, while the eastern sky was yet blushing, Lao Li knocked at my door to say good-bye; he was returning to the Mekong with my Tibetan porters. He had been with me ever since we left Likiang in April, and I was loath to part with him; but I dared not risk the delay, which the finding of even one extra porter might entail, until we had reached the Taron. The season was too far advanced.

The iron church bells tolled early for Matins, and the Lutzu began to arrive from distant huts; but the turquoise sky and sparkling sunshine beckoned to me, and I went up the steep slope that we had descended the previous day. The temperature had fallen only to 40° F. in the night, and it was already growing hot. The view of the Gompa La from here was magnificent in the extreme. The crest of the Taron divide, hacked about like a jig-saw puzzle, showed up sharply against the pure blue of the sky. Towards the northern end rose the massive bulk of the Gompa La monarch of the range, a lone snow-peak amidst a desolation of moraine and scree. For the entire Salween-Irrawaddy divide has been glaciated in the past, and reproduces on a smaller scale the features of the previous ranges we had crossed.

When the ice dwindled and disappeared, only the Gompa La remained snow-bound. It is of no great height; certainly it does not exceed, if it attains, 17,000 feet; but its great snowfields, feeding the crumpled glaciers which jolt over the cliff and squeeze into the valleys below, do not show present signs of distress. A state of equilibrium has no doubt been reached, and as much ice melts

each year at the glacier foot as is added at its head. The glacier is, in fact, stationary.

Below the harsh alpine region were dark forests, filling the valleys; and below them again the semi-tropical vegetation of the Salween itself. After admiring the view for some time, basking in the sunshine, I plunged into one of those belts of forest which stripe the lower ranges, and here I found a tree Rhododendron with colossal leaves (*Rh. sinogrande*). One I measured was 2 feet in length by 8 inches in breadth, with a 3-inch stalk. I did not, of course, see the flowers; but the capsules were so big—2½ to 3 inches long and fat in proportion—that flowers to match must needs be large also. In the forest were many oak trees, Magnolia, maple, Picea, and immense Pseudotsugas, all jumbled up in a welter of bamboo, which grew thicker and taller as water was approached.

On sheltered slopes were big Schima trees, and tree-of-heaven (Ailanthus), and in the ditches a riot of herbaceous vegetation, but not much in flower at this season, except a gawky bright yellow ragwort, scrambling many feet through the thicket, a massive violet-flowered Strobilanthes, and a rather sickly yellow touch-me-not (Impatiens). In the depths of the forest the slender twining stems of Crawfordia could be recognized by their dangling red-sausage fruits, and in the hedge numerous black bead-like capsules betrayed a giant stitchwort.

There was a curious and most unladylike ladybird here. The dull black wing-cases were crossed by a network of coral red lines. When molested, it drew in its legs and tucked them underneath; as it did so, from each joint exuded a drop of yellow

TWO OF MY LUTZU PORTERS FROM THE SALWEEN VALLEY.

fluid. If that did not scare away the intruder, the insect permitted itself to roll off the leaf, and be lost like a needle in a haystack.

Returning to the Mission, I found service over and Père André, surrounded by his flock, holding forth: the good man was explaining my wants to the tribesmen and urging them to accompany me.

Liberal pay was offered, but they were by no means eager to go, for two reasons. In the first place, they were busy reaping their crops. In the second place, they were afraid; it might snow before they got back—and in that case Heaven help them! For this reason it is always difficult to recruit porters in the winter, which, from the European's point of view, is the best time to travel. In the summer, on the other hand, when it is always raining, and flies, leeches, ticks, and all uncharitableness abound, the Lutzu can easily be persuaded to make the trip. They have nothing to do then. Their crops are ripening. They do not mind rain, and are hardened to the attentions of insects.

But there were symptoms of a possible interpreter. An old Chinaman, married to a Lutzu wife, expressed his willingness to accompany me. He spoke all tongues; but also he smoked opium and lived chiefly by cadging from the priests. The advantage to be derived from employing him seemed likely to be partly discounted by possible lapses on his part, and a lamentable confusion of *meum* and *tuum*. Ostensibly he kept a small general store (chronically out of stock), and for this reason was known to the priests as "Dubois," after a storekeeper of that name who lived in the Bon Marché. However, I arranged to employ the ancient (*faute de*

*mieux*), and by evening five or six porters had been cajoled. Next morning a change of heart reduced them to four, and Père André spent half the day, and most of the following day too, visiting isolated and distant huts and roping in likely starters one by one. By the evening of October 17 the party was complete. And that night " Dubois " got drunk.

I hoped to get away early next morning, and, by making an eight-hours' march, reach Tramutang about dusk. Every day was precious now. Alas, by the time breakfast was finished, only one porter had arrived; and shortly after " Dubois," who had not gone home to his wife the night before, came to say he had no intention of accompanying me. But worse was to follow. With that queer spite which animates a certain type of disagreeable person, he had persuaded the Lutzu to fall off too, probably by telling them they would never get their pay, though they had all taken an advance. The outlook was black, indeed. Ten o'clock and only one porter. Père André, who did not spare himself on my behalf, now tried to recruit porters locally to go as far as Tramutang; no doubt I could get porters there, he said, but it would take a couple of days, as they had to prepare food for the journey. However, as there were only three or four huts on the home spur, and as the inhabitants thereof were mostly out, the attempt proved abortive.

And suddenly the porters arrived, looking rather sheepish; they had brought their food and baskets in which to carry the loads, so evidently the strike was off. " Dubois " had gone home, and his evil influence no longer prevailed. The courtyard was full of blackleg tribesmen.

Of the seven porters, all but one were prepared to go to the Taron; the seventh would only go as far as Tramutang. Two of them spoke a little Chinese, so I was all right on that score. The loads were quickly tied up, and at eleven o'clock, having said good-bye to my kind host, we started. First we had to descend 1,600 feet to the stream which flows from the Londre La, a pass over the main divide about 20 miles north of the Si La. After ascending the valley for a couple of miles, we had then to climb 2,500 feet to the summit of the spur separating this stream from the Salween; and, finally, to descend 4,000 feet to the latter river.

It was a fine, sunny day, and hot in the valley where we halted at a hut for lunch. There are several villages along the stream, which is a swift, broad torrent, scarcely fordable even now. When in spate it is a terrifying river, impassable anywhere except by the bridge. The tremendously steep spurs, which hem it in, are subject to frequent landslides. The stream is called the Doyang chu, Doyang Lung-pa being the name of the valley.

A common tree, which grows wild in these parts, is *Cornus capitata*. In flower it is very gay, covered with large cream-coloured blooms. It bears fruit resembling a strawberry in appearance. The natives eat it, but I found it rather insipid. Moreover, the interior is filled with a chrome yellow pulp in which the hard seeds are embedded, so that the resemblance to a strawberry is quite superficial. In the tangle of rank vegetation which was scorching in the sunshine I noticed the scarlet berries of a tall Hedychium (or Alpinia, perhaps), and a species of traveller's joy, with cream and purple flowers.

It was late in the afternoon when we finally reached the crest of the last spur, and saw the Salween River itself far below us, and the Gompa La smothered in cloud. We descended by an uncomfortably steep path and reached the small village of Chiora in time to witness an interesting performance.

A woman stooped over a sick baby, while holding a ball of twine, the other end of which was fastened to a sapling stuck in the ground. Over her stood a medicine man, grasping a fowl by the legs, much to that bird's indignation. He had little more than a walking-on part, but kept up a monotonous chant, which sounded like "Haw, haw," long-drawn and dreamy. A soothsayer, holding a basin of food, mumbled prayers or incantations so rapidly that they gushed like a fountain from his mouth. Two other men clung to a struggling pig, which, tied by the neck, was making frantic efforts to escape. Evidently it did not much fancy its prospects. Other features of the séance were a fire, which crackled in a small oven beneath the trees, sending up a column of smoke; and a row of shaved bamboo-wands planted in the ground, each with a bunch of shavings on the top.

The procedure was as follows. The talkative fellow waved a wand about while he kept the porker cool by pouring cold water over its head. Finally, he raised the bowl of food and poured that over it too. It looked like a rather vulgar, practical joke. The "Haw, haw" person at the same instant, with a final "Haw, haw," flung the fowl into the air; it fluttered to the ground and scuttled away, clucking. After that came the final tragedy. Some

one took a *dah* and cut the pig's throat ; the blood was caught in a large iron pan. Into this the sorcerer dipped his mop with the bunch of shavings at the end of it, and smeared the other wands and the string, which the patient still held taut, with gore. It was a horrid mess. Finally, still giving vent to weird incantations, he seized the *dah*, and with one terrific blow, he severed the twine. After this he made a few passes over the baby's head, and the ceremony was over.

The interpretation of the parable is as follows. The sick baby, being bitten by unfriendly *nats*, it was necessary to drive them out ; at the same time, it was sound policy to find another resting-place for them. A fowl was chosen for this important rôle. The pig was a propitiatory offering, or, briefly, a bribe. The string was the way.

When, thanks to prayer and feeding, the *nats* left the baby and passed, *via* the string, into the unoffending fowl, it was only necessary to keep them there by making it impossible for them to return. So the string was cut, the *nats* were cut off, and they all lived happily ever after. The compact was sealed with gore.

This, of course, is animism—pure and simple. It indicates the direction whence the Lutzu are derived. Although the baby was undoubtedly sick, nobody would admit the soft impeachment. I asked several people, and they all denied it with a vehemence worthy of a Babu refusing a bribe. This is rather curious. Probably they were afraid of the *nats*.

Outside another hut, two girls, seated on the ground, were weaving cloth. The web was kept

taut by means of a belt of birch bark passing round the waist, and against which the weaver leaned back. The short stature of the Lutzu women is very noticeable; they are scarcely taller than the Kiutzu, or Nungs, of whom more anon.

We slept the night at Chiora. It was quite warm, the temperature falling only to 53° F.; but there was a hoary mist in the early morning. The Salween Valley here has a rainy season lasting eight months, and a dry season of four months; but the atmosphere is always waterlogged, heavy dew taking the place of rain in the dry season, so that the vegetation is kept well drenched. Sometimes it rains for thirty or forty days without ceasing.

We crossed the river first thing in the morning in a large dug-out, but, though about 25 feet long, it was only 18 inches in the beam, and the gunwale was almost awash. Consequently, only six men and two loads could be carried at a time, and the crossing took nearly an hour. The Salween, from this point onwards, flows through the monsoon region, and its valley is clothed with semi-tropical vegetation. Its bed at Chiora is 1,000 feet below the level of the Mekong River at Tzuku, the two places being almost opposite each other. The river twists about in the most bewildering fashion, almost as though it were flowing across a flood-plain instead of in a profound gorge.

Tramutang lies 6 or 8 miles up the valley from the Chiora ferry. There is a pass to the Taron right opposite the ferry, and another above Tramutang; but, as neither takes you over the Gompa La itself, I selected a more northern one, and incidentally the easiest.

Formerly the mandarin of the Lutzu country had resided at Tramutang, but his headquarters have now been shifted to Sukin, 30 miles downstream, as being more central. (The real reason is probably that such close proximity to the victorious Tibetans was unhealthy.)

A few years ago there was a fort (so called) at Latsa, three days' journey below Sukin. I visited it in the winter of 1913–14, when cooped up in the Salween Valley. Latsa has now been abandoned, the garrison, said to be so strong, being established at Shapa, three stages further south. Shapa means the "Sandy Plain." It is a large bay in the mountains, where about a hundred families reside. The present mandarin at Sukin has a bad reputation for oppressing the people. On the road to Tramutang I met the Tibetan chief of the village, and exchanged a few remarks with him. He asked my men where I was going, and when he heard to the Taron, "Tell the Englishman," said he, "to bring his people over to the Salween Valley, for the Chinamen oppress us."

The achievements of the British at Hkamti, the impartial administration and the contentment of the tribes, are well known on the Salween. So, too, is the "big road"—the road from Fort Hertz to the Lower Taron. I was told I should strike it in eleven days, and, though we actually took fifteen, it was a near enough estimate.

Between Chiora and Tramutang we passed through two villages, where oranges were ripening in the warm sunshine. Quinces are also grown here, though they were not yet ripe.

On the slopes, amongst the pine trees, were masses

of *Rhododendron sinovirgatum.* It must have had a very successful flowering season, for the little bushes were covered with capsules, full of good seed (K.W. 5421). The only other species I noticed was *Rh. decorum.*

From the cliff path, just before descending to the terraced slopes of Tramutang, we had a good view of the Gompa La again, but its view was still clouded. There is said to be little or no game in the Salween Valley, because the tribesmen shoot everything they see without scruple. On the other hand, the Mekong abounds with game, which is not so much persecuted by the Tibetans.

Instead of going to the *tussu's* house, or to the monastery, I went to a house recently established by the Catholic priests, situated close to the river. Père André had told me that I should see Père Genestier, as I did; he was leaving for Khiunaton on the following day, so I was just in time to catch him. The church is at Khiunaton. The house at Tramutang is used as a rest-house for the two priests when travelling between Khiunaton and Bahang.

I knew Père Genestier. He has lived thirty years in the Salween Valley, without ever seeing his homeland again. He must be nearer sixty than fifty, yet a year ago he performed the astonishing feat of marching from Bahang to Tzuku in a day —eight hours without a break. He has always been a tremendous walker, and as a young man he covered the mountains at terrific speed. When, many years ago, he visited the Taron, the Kiutzu wished to make him their king! He is a little man with a great heart—a heart of gold.

I spent the afternoon with Père Genestier, discussing the prospects for the journey, and poring over maps. He assured me I had chosen the best possible season, and was confident that the weather would keep fine. Certainly there was no reason to feel despondent, for though the snow-peak still attracted a good deal of cloud to itself in the middle of the day, it was generally clear at dawn. As for the valley, the sun shone brilliantly there all day.

Père Genestier was certain I should reach the Taron this time, and I was equally certain that if I reached the Taron I would get to Hkamti Long somehow. But until I *did* actually reach the Taron, I felt uneasy—an almost subconscious feeling under the circumstances. The sight of Tramutang had recalled previous attempts, and I knew what the cold fury of a three-days' snowstorm could do in this abominable valley. It was a snag I had split on.

I made inquiries about the route, but no one had been as far as Hkamti, though I obtained a good deal of useful information. The distance was difficult to estimate. In an air-line it is just about 100 miles from Tramutang to Putao (Fort Hertz). But the route I had selected was very far from being a direct line, and it would be necessary to add at least 50 per cent. to its length, leaving out of account the high ranges to be crossed. In fact, the more I studied the map, the further off Hkamti Long appeared to recede.

I set down the time required, therefore, as anything from a month to six weeks. The fact that it took me only twenty-eight days may be ascribed

to my striking the road on the Lower Taron, which follows a different and easier route to the one originally contemplated.

Père Genestier had no difficulty in securing the seventh porter—a fine, handsome specimen of a Lutzu. I gave them all an advance of wages, and they went off to buy meat, *tsamba*, and salt for the journey, the latter for barter with the Kiutzu of the Taron.

Everything was in order for a start next day, October 20.

## X. THE MARBLE GORGE AND THE PATH OF TERROR

A WORD as to the tribes inhabiting the Salween Valley.

Where the Bhamo-Tali-fu road crosses it (about latitude 25°), the Salween is occupied by Shans, who extend northwards for 30 or 40 miles. North of them are the Lisu. These latter certainly came to the Salween from the east, whence they were driven by the Moso.

Moso and Tibetan pressure in the east, aided perhaps by the Shan upheaval, squeezed out the Lisu tribes and drove them to seek shelter in the inhospitable Salween Valley. For the Lisu are of Siamese-Chinese, not of Tibeto-Burman, stock.

That comfortable fiction, the irresistible pressure of the Chinese westward advance, is about as logical as the great Russian steam-roller myth. The Chinese advancing westwards from the plains of Szechwan, whether irresistible or not, have long since come up against an impenetrable barrier—the Tibetan Marches. At best they have turned this obstacle, following one or two narrow corridors, which pass safely through the lines—no doubt on sufferance.

But the weak and uncertain trickle which the dam lets through, impinging against the triple steel bars of Tibet, need not be magnified to the dimensions of a flood carrying all before it. No matter

how great the pressure in Central China may be, these narrow exits in the west can filter through only a thin stream, which is quickly swallowed up in the immensity of the mountains. The door to Tibet can be shut and bolted at any moment, but the door to the Pacific stands wide open.

The Lisu must have arrived after the Lutzu had established themselves, or they would have occupied the Tramutang region. They now occupy the valley between 25° 30′ and 27° 30′. As for the Lutzu, there are only 5,000 or 6,000 of them all told. Above the Granite Gorge, where the Salween completely changes its character, passing abruptly from monsoon to semi-desert conditions, there are a few villages of Tibetan Lutzu.

These Lutzu, though shy with strangers, are honest and friendly. They are practically identical with the people called Kiutzu by the Chinese, who inhabit the Taron ; and both are, in a general way, the people we call Nung. These latter inhabit the Taron, and valleys to the west (hence the name Kiukiang, or Kiu River, which is the Chinese name for the Taron).

But the Nungs are a mixed lot—Nung is a generic term, like Kachin or Maru. Pritchard [1] says that the Nungs of the Nam Tamai are Naingvaws—a reasonable conclusion. But Clerk [2] says that the Naingvaws, Rawangs, or Khanungs (as he calls them), are of mixed Kachin and Chinese descent, which from every point of view is difficult to accept. It is true that the Nungs are, in the very broadest

[1] *Report on a Journey from Myitkyina to Sadiya*, by Captain B. E. A. Pritchard.

[2] *Report on the Marus*, by F. V. Clerk.

sense, Kachins, and that their language, like that of the Naingvaws, is of Tibeto-Burman origin. The Kachin element in this morganatic alliance might account for that. But where is the Chinese element? Was it so recessive as never to have reappeared to this day? For in the browbeaten Nung there is no glimmer of Chinese urbanity, of Chinese polish, or even of Chinese guile. Neither in appearance, language, nor customs is there a trace of the Celestial; and it is difficult to believe that, had Chinese characteristics entered into the composition of this alleged hybrid, they could have been so utterly suppressed.

The Nungs of the Taron call themselves Tarons, or Talons, and, according to Pritchard, speak a language which is closely allied to Kachin—by which he means Chingpaw. This I take leave to doubt; the resemblance is probably not as close as he would have us believe, as is in any case more superficial than real.

Nevertheless, we may take it as proved that the Nungs and the Naingvaws (as also the Marus, for that matter) are, in the widest sense, Kachins.

It is fairly certain that the Lutzu came from the west, that is, from the Taron, and that they were the first-comers to this part of the Salween. They found it uninhabited. The Chinese came later, and have done little or nothing to establish themselves permanently. Beyond the official at Sukin and a few soldiers, there are only two or three resident Chinese families between Tramutang and Sukin, none at all below the latter village till Shapa is reached. Nor are any Tibetan families domiciled below the Granite Gorge. True, the native chieftain

of Tramutang is a Tibetan ; but he is the only one.

Although the Lutzu originally came from the west, moving eastwards, the tide of migration has now set westwards, especially further south, where the passes are easier and the country on the other side less dour. That is to say, it is the Lisu who are moving over into British territory, particularly into the wide valley of the Ahkyang. On the Upper Taron, however, so difficult is it to eke out a bare subsistence that whole families still move across to the Salween, where conditions are a little —not much—better. Thus the present occupants of the Salween came both from the east and from the west ; comment on its practicability as a corridor between north and south is needless.

There can be no doubt that the monsoon Salween is very unhealthy. The people are thriftless. After a bad season, starvation stares them in the face, and every few years there is a serious famine. This seems quite unnecessary, because they subsist on grain, which is easily stored. Epidemics, too, decimate them. There is a curious, but very prevalent, belief that the more simple-living jungle folk are not subject to the diseases which harass the hectic life of the white man. This is a fallacy. Influenza, typhoid, smallpox, and other diseases scourge them. They are *nat*-ridden. In the winter of 1913–14 there was a serious epidemic in the Salween Valley. When I next visited it, in 1922, they were just recovering from a famine in the previous summer.

When the horror of disease descends upon them, the people have but one remedy. They flee. The sick—those who are unable to move—are boycotted.

Village after village will be found derelict. The huts are empty. Not a soul is to be seen, and the crops, standing in the deserted fields, slowly rot.

October 20 dawned brightly. The porters were late, but we started about 9 a.m. After traversing the terraced ricefields for a mile, we entered the cool precincts of the Marble Gorge. This gorge is about a mile long. On the left is a sheer cliff, many hundreds of feet high. A few palms cling to the sun-drenched surface—the first of the Indo-Malayan palms. The narrow path clings to the wooded cliff on the right bank, clambering up and down. Here there is a wealth of vegetation —species of Ficus, Castanopsis, and other forest trees ; ferns, orchids, and creepers. Down below, the shrunken river tinkles over pebble-banks.

During the summer the placid scene changes to one of immense fury. The great river, jammed into the gorge, leaps up. In 1922 it rose 40 feet, and smashed the stone path to smithereens. Heavy slabs of marble were flung about like pebbles. For months the gorge was impassable. We had some difficulty even now in getting along the ruined path.

The cliffs, made of sugary marble, and coloured pink and pale violet, white, and smoke-grey, are beautiful. It is this stone which floors the little temple at Tramutang. Several queer orchids were in flower amongst the heaped-up stones under the tangled trees. The most curious was a big Chirropetalum, its striped tongue-like flowers arranged in the form of a wheel. Others were species of Dendrobium, Cymbidium, and Bulbophyllum.

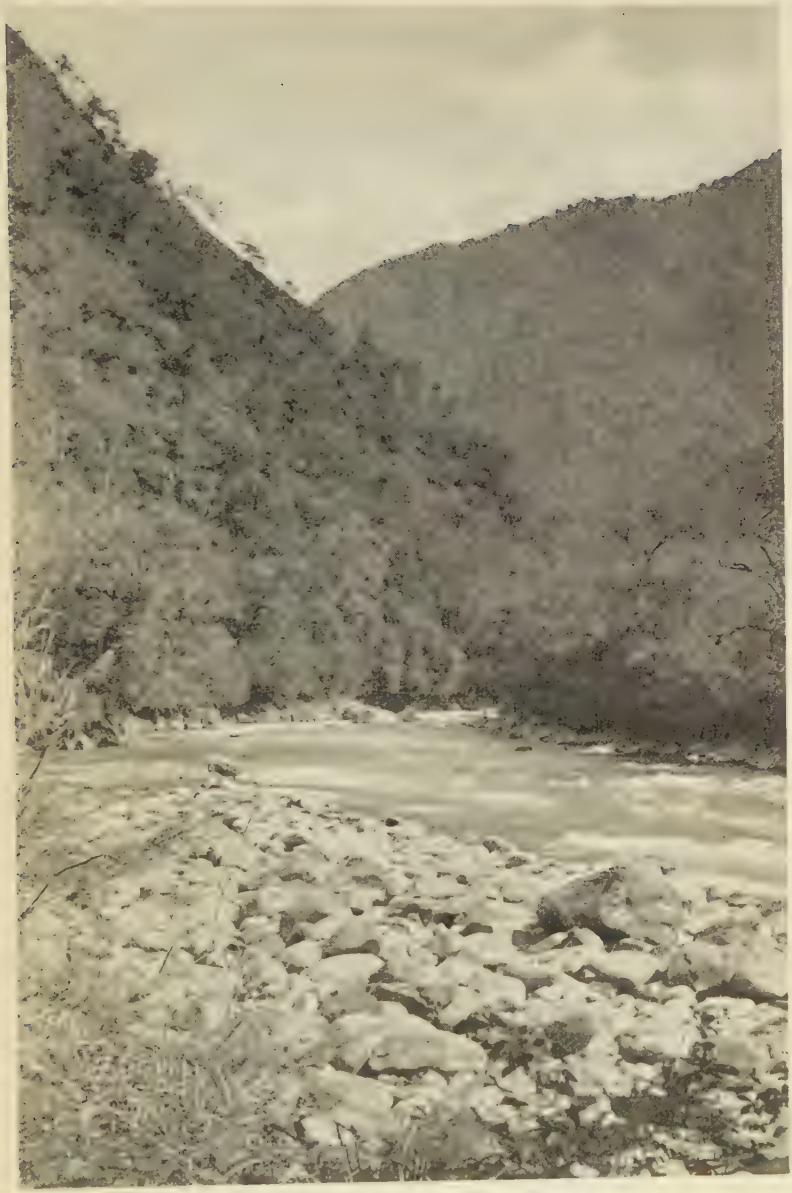
At the upper end of the gorge the glacier torrent

crossed by a wooden bridge, comes booming in. There is terrific confusion here. The river bed is filled with cyclopean blocks, many of them, perhaps, carried down by the glacier itself centuries ago, and the river thunders into the gorge over the obstruction. The altitude of the river bed here is 246 feet above Chiora, the average fall being, therefore, about 25 feet a mile.

At the bridge, where there is a village called Su-chi-tung, Père Genestier left me to return to his flock at Khiunaton ; our route lay up the steep flank of the mountain to a village perched on the spur above. On the sunny slope grew a little creeping fig—it was more like a Gaultheria in appearance than a Ficus—with little edible marbles for fruit. Most of them had already been eaten by the natives, but I found one, and very good it proved. In the fields a small violet-flowered Torenia gaped and pouted at the passer-by. We halted for lunch here, in order to collect ourselves before venturing on the dangerous path which skirts the cliff above.

From this village we had a fine view of the Marble Gorge, the river, nearly 1,000 feet below, half in shadow, half in sunlight. The mountains seemed to thrill and tremble to the crash of the water.

We rested an hour, for it was sultry now. Then we started up the ravine. It was necessary to pass through the portals of a natural gateway between two granite cliffs, the path a mere ledge, the torrent tumbling and shouting far below. And most exciting it proved. In places there was no path at all. Elsewhere it was buried in rich green grass. We clung to the cliff, where a false step meant a violent death. For me it was not so bad, but the men,



Gorge of the Taron.

supporting the loads round their heads, had to cling on like lizards.

Wherever there was shade, forest reigned supreme. *Rhododendron Mackenzianum* was conspicuous here as a slim tree 30 to 40 feet high. The flowers are white, lilac, rose, or blush-pink. The slender, curved capsules reach a length of 2½ inches, and the dead style was as long. I never saw more than four capsules in a truss. Another peculiarity is the whorled leaves, which in the adult are bright glossy green and perfectly glabrous, but more or less hairy in the juvenile stage, with ciliate margin and hairy petiole; so much so that at first I did not recognize it for the same species. The trunk is very smooth, almost glassy, and of a peculiar tawny purple colour. Great pompom inflorescences of the fragrant rosy-pink Lucilla were in bloom, visible a mile away. At last we were through the ravine and climbing steeply to the last Lisu village, which we reached before dusk. Here the slope below the cliff was covered with scattered alder and pine trees.

This village, Nyi-wang-lung, is 1,556 feet above the Salween. In the small hours the temperature fell to 44° F.

I slept on a hard wooden bench in the store-cupboard. There was just room to turn round, but no room to light a fire. The porters slept in the main apartment. So great was the crush that the daughter of the house was driven from home, and sought shelter in another hut.

Before starting next morning the proprietor wanted to sell me all kinds of silly objects—a monkey, a cross-bow, a basket; he only succeeded in selling me a flagon of crude alcohol.

This day, October 21, the climb began in earnest, and without further preliminaries we were introduced to terrifying travel.

First we plunged down to the bed of the torrent, past several more huts completely hidden under the lee of the cliff. Immediately afterwards we entered the forest, and twilight. Our ears were deafened by the roar of the water. The path climbed giddily. We balanced on crazy logs or descended the face of the cliff, clinging for dear life to roots and rocks. Everywhere the rank undergrowth surged waist-high ; the trees were curtained with moss. A dim light penetrated the heavy canopy of foliage, and the air was clammy with moisture. Sometimes a lance of sunlight split the foliage, and shone scarlet on the pouting flowers of an Æschynanthus.

After several hours, the forest grew thinner, but the trees were gigantic, bigger than anything we had seen previously. It is from these immense Conifers [1] that the natives of the Salween fashion their dug-outs.

Now the valley began to open out. The slotted cliffs on either flank came into view, and conic wedges of boulder scree spread themselves out below. We clambered over the piled-up ruins, and, towards evening, camped under a colossal block of granite which offered convenient shelter. Indeed, so ample was the protection afforded by it, there was no occasion to set up my tiny tent, and I slept

[1] From their appearance, I took these to be a species of Pseudotsuga. I am, however, informed by Dr. Handel-Mazzetti that this was undoubtedly the Taiwania which he discovered here in 1916.

on the ground by a welcome fire, 3,964 feet above the Salween.

We were now in the midst of the most wonderful wealth and variety of Rhododendrons it is possible to imagine. They grew everywhere. Bogs, boulders, cliffs, forest, and meadow existed for them. In the forest, they were trees with glass-smooth, chestnut-coloured trunks. In the meadows, they formed bushes, gnarled and compact. On the steep granite platforms, smoothed by the scour of ice, they formed patches of interwoven scrub, not a foot high. On the alpine cliff, they changed again to little scared creeping things hugging the rock like ivy. There was no end to them. Every thousand feet of ascent they changed completely. It would have been worth a year of one's life to have seen that valley in June, with the caked snow lying about, water gurgling in a thousand brooks, and everywhere clots of Rhododendron romping into flower—gamboge and carmine, snow-white, ivory, purple, crimson, and lavender. I counted twenty-eight species here. The most interesting was a small shrub whose shoots, petioles, and capsules were covered with dark, stiff bristles. The under-leaf surface was furred with a thin coppery red indumentum (K.W. 5427).

Before dark one of the Lutzu porters—Sere, that is to say, 'Gold,' by name (he who spoke a little Chinese)—cooked my evening ration: boiled rice, some potatoes, and a slice of meat; and I brewed myself a mug of hot cocoa to finish up with. By eight o'clock the men, muffled up in their cloaks, were fast asleep round the fire. I sat in my corner for an hour, writing my diary, and packing specimens

collected during the day. The stars blazed fiercely in a jet sky. The shrill gurgle of many torrents was interrupted only by the hoot of an owl or the occasional squeal of an animal. Then I crawled into my "flea-bag," and presently fell into an iron sleep.

October 22. The temperature stood at 39° as the light began to grow. I huddled round the fire while we cooked breakfast, and at 8.30 a.m. we marched.

Though we had no more of those alarming precipices, with their bevelled ledges to cling to, the going was very arduous. On either side, the cliffs towered up in a blank wall to the high alpine couloirs, which had flung their rubbish into the main valley and piled it immensely. Water slid and clattered over the cliff, and as each frothing torrent spread out, snoring through the gravel, we had to cross it as best we could.

Blocks of stone as big as houses barred the way, and we clambered up through a chaos of boulders lost in a wilderness of forest; for, though we had left the heavy timber below, in the sub-alpine region we found the confusion of trees, shrubs, bamboo, and creepers even more difficult to penetrate. Here were brightly coloured Pyrus, maple, birch, Abies, and Taiwania, with numerous Rhododendrons, large and small, and patches of scrub willow. The trees were roped together and smothered under a weight of Clematis, Akebia, and vine. Thickets of Rubus, Ribes, and Enkianthus added to the confusion.

Had the men not known the path, we could never have followed it. The least fall of snow, and we should be lost.

The valley continued to expand as we ascended. We pushed through flat meadows choked with bamboo, where herbs grew 10 feet high—Adenophora, Thalictrum, and many Compositæ; everything was drenched with dew. There had been wonderful flowers here—larkspur, Nomocharis, monkshood. Then came more clambering over boulders to the next terrace.

Where water now flowed, once upon a time had flowed ice. The blunt nose of a glacier gleamed high up on our right; thus far had it shrunk back. The trail of the ice was as clear as the silvery trail of a slug across a garden path.

By this time we were 4,000 feet above the Salween bed, and here it was late autumn, whatever the calendar said. The scrub forest formed patches of gorgeous colour, a mosaic of riotous reds and yellows, laced with cold green. The valley was still walled in by lofty cliffs, crowned with the crockets and pinnacles peculiar to granite formation.

A merciful change from the eternal boulder bed was afforded by smooth and steep granite slabs, which had to be crossed gingerly. A film of bog hid the underlying rock in places, and converted it into a butter-slide, and in collecting seed of an Iris (K.W. 5459) I almost came to grief. On some of the drier slabs were tuffets of a dwarf Rhododendron—*Rh. keleticum* (K.W. 5430), and, in nooks, stout little bushes of the evil-smelling silver-leafed *Rh. brachyanthum*, or a close ally thereof. We followed the beds of streams, which for steepness resembled roof-gutters; the spouting water did not add to our comfort. To make matters worse, it began to rain and then to snow. Happily this

did not last more than an hour, and presently the setting sun blazed out in a welter of gold; the harsh peaks pricked through the curdled mist one by one, and, as dusk fell, the dirty sky was slowly cleansed. Just before dark we climbed a cliff, and found ourselves in a little dell amidst jagged fir trees. We were on the fringes of the forest.

Swiftly the men set to work to light the fires—we were in for a bitter night. After nearly eight hours' climbing we were all tired, cold, and hungry. The scene froze my blood, it was so hard and unrelenting. The clipped and broken trees, crouching in the hollow; the arc of mountains at the head of the valley, bluntly outlined against the star-strewn sky; and, overshadowing us, the massive lump of the Gompa La, with its ragged fringe of glaciers peering over the cliff, made me shiver.

There were two or three broken-down birch-bark shelters scattered about, and the party split up and occupied two of them; but I appropriated a nook apart, lit a bonfire and laid my blankets alongside it. 'Gold' came across, replenished my stock of firewood, brought water, and helped me cook supper.

A black wind moaned over the passes. In the west, gloomy clouds sailed over from the Irrawaddy, but beneath them a band of tawny light seemed to beckon us towards Burma.

"Where do we go to-morrow, Sere?" I asked.

"Over there!" He pointed through the trees to a notch in the rim of mountains, below the cliffs of Gompa La. "We must follow the ridge for a day's march; there will be no water."

"Shall we reach the Irrawaddy next day?"

"No; it is a very bad path. There is a big lake

below the Gompa La, sir ; that is all the water we have now, and it is some distance from camp."

Sere was offering an apology for the meagre quantity of water he had brought me. I did not blame the men—it was dusk when we halted, and every one was tired. There was sufficient for us all to cook with, and, as by this time it was freezing, I was in no panic to waste good water over a frivolous pastime like washing—or even washing up.

Then Sere left me to return to his birch-bark shelter.

For an hour I worked by the firelight. Through the ragged branches I could see the stars opening and shutting as the thin mist swept by. Far below, in the deeply eroded valley, the stream chattered ; the noise seemed to grow fainter as the frost hardened ; but perhaps I was only growing sleepy.

I had removed my boots, taken off my jacket and trousers, and sat by the fire wrapped in a Tibetan cloak. No further disrobing seemed advisable, and presently I crept into bed to snatch what sleep I could.

Before dawn we awoke in ten degrees of frost ; it was too cold to sleep decently, so I got up. Everything was glazed with ice. The sharp features of the mountains, haggard in the grey light, softened slowly as day broke.

Presently Sere came across, built up the fire and helped me cook breakfast. He was shivering with cold.

" It is going to be a fine day, sir. We must start early—the path is difficult."

" All right, as soon as you have finished breakfast, pack up the things."

Nevertheless, it was difficult to do anything until a little sunshine had put warmth into us; consequently, we did not start till nine o'clock.

Emerging from the trees, we came almost immediately upon a large basin, lying at the foot of the Gompa La itself, which towered over us in a sheer wall some 2,000 feet high; the centre of the basin was occupied by an extensive lake, and all round it was a wide margin of marsh. The stream from the lake shot over another cliff into the deep valley below.

The form of the valley was indeed rather peculiar, and typical of the Salween-Irrawaddy divide. A high terrace skirted the foot of the cliff all the way round the head of the valley. Below this step, the mountain again dropped suddenly to the valley bottom far below in the form of a sharp **V**. The step marked the original valley level, when glaciers first rough-hewed the outlines of the scenery; the deep trough below was ploughed out later by water. Once the high-level terrace was reached, travel was easier.

Professor Gregory has stated that the Tibetan rivers have cut **V**-shaped slits in the older **U**-shaped valleys of an ancient plateau (*Geographical Journal*, March, 1923). As this is precisely the structure we find on a small scale at high altitudes on the Salween-Irrawaddy divide, where the high-level valley remains as a shelf, fitted with basins, it is a reasonable inference that the high-level floors of the big valleys also were carved by glaciers.

After skirting the lake and the precipices beyond, we climbed a steep gully to the pass, 7,742 feet above the Salween, or about 14,000 feet absolute

altitude. The day was perfectly fine, not a cloud in the sky, and, though it was cold at this height, the magnificent scenery was well worth the climb.

To the west, a high rocky ridge, separated from the main range by another deep trough, suppressed any possible view of the Taron gorge. To the east, the Salween gorge was equally invisible, owing to an angle in the valley. Northwards, the bulk of the Gompa La filled the foreground. There was very little snow visible, except for a cornice at the summit; the wall above the lake faced due south.

To climb the Gompa La, it would be necessary to turn the south cliff by a spur, at the lower end of the lake; this would take you into the big upper valley, to which the glacier is now confined. From here, if the glacier itself presented no serious difficulty (and its slope appeared to be remarkably gentle), the summit could be easily attained.

The interesting discovery had now been made that the glaciers on the Salween-Irrawaddy divide, like those between the Salween and the Mekong, and between the Mekong and the Yangtze, and again beyond the Yangtze, had for ages been slowly retreating. Why?

That is the problem. No one knows. But we have certain significant facts to consider.

The pass which we crossed—the Gompa La—is barely 13,000 feet. The snow-peak itself certainly does not rise much more than 3,000 feet above the pass—its altitude is in the neighbourhood of 17,000 feet.

Now, in this country, 17,000 feet is not particularly high. There are peaks of nearly 25,000 feet; peaks of 20,000 feet are common. Many of my

best plants were found at 17,000 to 18,000 feet; many of my camps were pitched at 15,000 feet.

East of the Yangtze, however, in the heart of the Tibetan Marches, peaks of 16,000 and even 17,000 feet are not snow-clad. The entire region is heavily glaciated, but there is not the vestige of a glacier as low as that to-day. They have disappeared. They have left indelible marks, which will be clear cut a thousand years hence; but they themselves have wasted away. Moreover, and more important yet, where glaciers are found, *examination shows that they are still retreating.*

Now, the Gompa La, less than 17,000 feet high, gives origin to a large glacier, comparable in size to those originating from peaks not less than 20,000 feet high situated further east. In other words, there has been greater deglaciation in the east than in the west.

Of all the possible causes of deglaciation—that is, the gradual retreat and final extinction of glaciers—the most swift and effective is lack of rainfall. Without adequate precipitation, no mountain, however lofty or wherever situated, can be permanently snow-bound; and, without a snow-cap, it cannot give rise to a glacier or river of ice.

This part of Asia depends primarily for its rainfall on the south-west monsoon. In the Marches, east of the river corridor—where the Yangtze, Mekong, Salween, and Irrawaddy swing out of Tibet—the rainfall is far less than it is on the west side. The Yangtze and Mekong gorges are arid. The Taron (Irrawaddy) gorge is moist. The Salween in between is both—moist south of the Gompa La, arid to the north of it.

The inference seems to me to be this. The Tibetan Marches were formerly—before history was written, perhaps—very much wetter than at present. The climate has changed completely. Again, why?

But there is no denying that the Gompa La glaciers have also retreated many a mile. Formerly they crashed over the cliff from the upper valley, and filled the lower valley by which we had ascended. In those days there could have been no route to the Taron this way; perhaps there were no tribes in the gorges either. Now the glaciers only discharge their water into it.

It would seem, therefore, that the rainfall here also has decreased, though not to the same extent. The climate is changing—unless, indeed, the retreat of the Gompa La glacier has been stayed. The local tribesmen, who use this pass, will tell you that the glacier is stationary, neither advancing nor retreating. It may be so; unfortunately, I could not reach it and make sure. If no other excuse for retracing my steps in the future were available, an ascent of this glacier would be sufficient.

The fact is beyond dispute that the glaciers of this region have been, and I believe still are, retreating, more in the east than in the west. The vast mountainous grid of the Marches is being wrung dry; and the key to the problem centres in the deeply grooved corridor through which roar the great gutters of Kam.

This, however, seems to be only a small kingdom in the realm of Asiatic desiccation. Central Asia, we are told, has dried up within historic time, and the retreat of the ice all over Sine-Himalaya may be

only one example of a much more widely spread effect. If so, we must look beyond local causes to those great fundamental changes which the whirling spheres in their courses have brought about; I mean ice ages, or a change of direction, or intensity in the air-currents.

## XI. FLOWERS OF THE MOUNTAINS

THERE is another problem intimately associated with deglaciation and climatic change in these mountains. I refer to the inconceivable wealth and beauty of the flora. It is unequalled anywhere.

It seems only right and proper that the most varied flora, the most lovely flowers, should be found on the greatest ranges and the loftiest peaks, amidst the finest scenery in the world. But it is only after years of travel and collecting that one begins to form some faint conception of the limitless wealth of beauty. To be told that there are 10,000 or 15,000 species of plants known from these ranges, and that the surface has only been scratched at that, conveys nothing. The mind cannot grasp the significance of it, because there is hardly anything with which to form a comparison.

The wealth of flowers here, when the snow disappears in July, must be absolutely astounding. Of course there were none now—everything was in fruit; but that gave one the key to the scene.

On the grassy slope leading up to the pass I collected seed of several Primulas. There was a fat-leafed 'Nivalis' Primula, a coarse, handsome flowered plant, I suspect, growing on the bank (K.W. 5460); and a lanky 'Muscarioid' (K.W.

5464) scattered through the meadow. More common than this last was one of the 'Omphalogramma' Primulas (K.W. 5461)—possibly *P. Franchetii* of the Mekong-Salween divide. A species of Nomocharis was also seen. In the bog by the lake side were the recognizable skeletons of Pedicularis and *Primula serratifolia*; but by far the commonest Primula was a wee spatulate-leafed species which carpeted the slopes (K.W. 5462). Wherever the ground was too moist for the Rhododendron scrub, these now anæmic-looking Primulas grew cheek by jowl, forming large colonies. The rock, be it noted, was slate and schist—not limestone.

Goodness knows what the annual rainfall is on the Gompa La; but I would lay long odds it is not short of 100 inches. These Primulas, then, might be put straight out into the bog garden, and suffer no harm on that score. But they will hate our mild winters. For six months they are covered with snow, but in the spring, even before the snow has melted, they must be moistened and stirring beneath it.

The dwarf Rhododendrons of the alpine region were many and various. They clothed the slopes with a continuous carpet, broken only where the ground actually oozed water. Amongst them I remarked the creeping *Rh. repens*, with hard, leathery, rounded leaves, dark shiny green above and purple beneath, sprawling on the rocks, or hanging in short festoons over the ledges; the silvery-leafed *Rh. sanguineum*; the brooms and brushes of a 'Saluenense' (K.W. 5436); the twiggy bushlets of a 'Lapponicum' strayed from the eastern ranges;

and the stouter under-shrubs of *Rh. brachyanthum.* On the far side of the pass, amidst the moraines and lakelets, were scattered plants of a ' Cephalanthum,' the only species I saw of which I did not secure seed.

The various species grew in colonies, or mixed up together, certain ones being nearly always found in company. With them also grew other under-shrubs, such as juniper, Cassiope, Gaultheria, and Rosa (*R. sericea* ?) ; and springing up amidst them were many alpine flowers—gentians, Polygonum, Lloydia, and others.

Some of the Rhododendrons had a very considerable vertical range, and changed their habit accordingly. *Rh. sanguineum* (K.W. 5432) was an alpine, forming tanglements 1 to 2 feet deep amongst the bamboo growth ; while *Rh. sanguineum* (K.W. 5433), as a shrub 6 feet high, was hard to recognize as the same species.

Altogether I noted twenty-eight species of Rhododendron on the Salween-Irrawaddy divide, as against fourteen species on the Mekong-Salween divide ; clear proof that as we travelled westwards into regions of heavier rainfall, they were increasing in variety.

Between the Taron and the Nam Tamai I remarked only twenty species—but we were then travelling south-west, and crossing much lower ranges of mountains ; and I was not a little surprised that I should have counted as many as seven species between the Nam Tamai and Hkamti Long.

The sixty-nine species recorded above were not, of course, all different, as some species have a wide distribution and are met with over and over again.

But I did enumerate no fewer than forty-five distinct species between the Mekong and the Hkamti Long, and of most of these I secured seed.

Well do I realize, however, that these represent but a tithe of the species to be found in those wet wooded mountains; that the species are to be numbered, perhaps, not by tens, but by hundreds.

To resume. After crossing the pass, we began to traverse round the head of the valley below, travelling almost south. The main divide, together with the ridge in front, formed a letter H lying on its side, thus ⊥, the crossbar separating two deep valleys, one pointing north, the other south. We had to cross the bulkhead and continue the traverse southwards along the face of the opposite ridge, before turning west again.

There was a steep ridge on our left, and I climbed another 500 feet in order to get a photograph of the Gompa La. A small and very steep glacier flows down the west face; but the great eastern glacier remained hidden.

Meanwhile, the porters had gone ahead, and I had considerable difficulty in finding the path over the wilderness of boulders, tarns, and glaciated rocks which spread out all round us. It was nearly two o'clock when I came up to them—they were having lunch.

It had clouded over during the day, but we could still see a group of snow-peaks to the north-north-west—near the sources of the Irrawaddy, I supposed. The men wanted to stay here for the night. There was water and firewood of a sort, but not a vestige of shelter. The wind was chilly even now in such an exposed position at 13,000 feet altitude.

"We had better go on," I said. "We shall be frozen to death here."

"There is no water, sir; we cannot reach a camping-place before dark." Sere was distressed.

"Oh, rubbish! There must be water somewhere. You don't know the way!" (He didn't.)

So we started, and presently stepped on to the razor-edged cross-tie, or bulkhead, connecting with the opposite range; it was not more than 600 or 800 yards in length, with precipitous sides.

As usual, I collected seeds of Rhododendrons, Primulas, and other flowers as I went along, and was soon far behind. The porters rounded a corner and were lost to sight. I loafed on, paying no attention; I was far too much occupied with the flora, geology, and glaciated aspect of the country. It was like a gorgeous dream.

I crossed the bulkhead and followed a path—not a very good one, to be sure—up the range opposite. There was a notch high up; obviously the pass, or a pass.

I had gone, perhaps, a mile, when I noticed that I could see some distance ahead over the grey screes; and there was no sign of the porters. I shouted. The cliffs flung back a mocking echo, but no one answered me. Thinking they might be hidden in a hollow, I went on, till finally it dawned on me that I really had missed the road. There was only one other possible route, namely, over the bulkhead and down the valley on the far side. It appeared possible to reach this valley by climbing the ridge on my left; but having reached the summit, about 500 feet above, I found myself on the brink of a precipice—it was impossible to

descend without exceeding the speed limit. However, I could see the path below, and I lifted up my voice; a faint answer came back to me, and I felt considerably relieved. I did not at all relish the prospect of spending a night here alone.

I therefore retraced my steps to the cross-tie, picked up the path, and found that it descended the south wall, where it ran out to the ridge on that side. Of course, as soon as the porters got below the crest of the bulkhead, they had disappeared from view. Hence my erring and straying like a lost sheep.

The path now traversed below the crest of the ridge, over very barren scree. The most interesting plant here was a blue poppy—in seed, of course. Strange how these delicate and fugitive flowers prefer the stoniest places, and refuse shelter of any kind! It was difficult to detect the skeletonized plants now, but I secured a few seeds (K.W. 5463). It was certainly not rare—what a lovely sight it must be in summer flaking the mountain side with turquoise or violet!

On the rocks were massive clumps of *Primula dryadifolia* (or maybe it was *P. philoresia*) and a few—a very few—Saxifrages. At length I caught up with the porters. Hour after hour we marched along the flank of the range. The slope was very steep and covered with dwarf Rhododendron which continually tripped us up.

At last we reached a place where to slip or trip would have been fatal. We were skirting a cliff, at the head of a valley. A chimney gashed the cliff and formed a deep rent across our path, leading to the valley far below. It was too wide to jump—

we must climb down into it, and up the other side. There were steps of a sort.

The porters went first and I brought up the rear. There was no dodging it, because we were on a slope, with the cliff on one side of us and a precipice on the other. The steps descended the angle between the gash and the precipice; you could fall off whichever side you preferred. However, if the porters, proceeding with the utmost caution, could get down safely, I supposed I could—and did. The path, still skirting the cliffs, was horribly bad, and presently we found ourselves on scree once more. It was by this time dusk; as usual, I was behind. Suddenly the porters disappeared again. I shouted —no answer. Climbing the scree to the very foot of the cold cliffs, I found them huddled up on a ledge above, and, by scrambling along, managed to reach them.

There was just room to spread my blankets, with my head against a chunk of granite and my feet in somebody's back. The men had to sit in a heap. I looked at the place dubiously, and Sere grinned.

"Where is the water?" I asked—always the first question when one flings oneself down after nine hours of this sort of thing. I might as well have asked for a whisky-and-soda.

"There is none, sir."

"Well, light the fire, anyway!"

"There isn't any firewood, sir."

Sere seemed to take a malicious delight in telling me this. However, he was wrong, for presently two men, who had been foraging below, returned with an armful of twigs. But it wasn't much of a fire.

Night descended swiftly, and a cold wind moaned through the mountains. The sky was diced with stars—how absurd some of the familiar clusters looked; Orion resembled the five of diamonds! I sat with my back against the wall, looking over the edge of the gulf. Why had I been such an ass as to go on, when we might have been seated comfortably round a bonfire near the Gompa La? I could have kicked myself—only I was afraid of rolling off the ledge. But, of course, the reason was that I feared a snowstorm, and desertion of my men, until it was easier to descend to the Taron than to return to the Salween. That point had now been reached.

I opened my emergency ration and ate a big slab of Mexican chocolate; then, having written up my notes of the day, I crawled into bed.

There was not much sleep that night—not because it was cold, for we had only a few degrees of frost. But I was aching in every limb, and, when I awoke at four o'clock for the last time, I watched the east anxiously. I think they were all glad when the waxing light began to wash out the stars one by one. The east began to glow, and suddenly the sun rushed up over the ridge, showering the valley with golden shafts.

Immediately we packed up and started. In half an hour we reached the end of the cliff and turned the corner. The last doubt vanished. The Taron gorge lay at our feet. That first view of Burma I shall never forget. It was not the Burma of fiction—or even of fact. It was a new Burma, a harsh and hungry Burma—hard as iron, not fair.

All round us were the ice-worn cliffs and valleys.

In the temperate rain forest, N.E. Frontier of Burma.

To the north, an are of glittering snow-peaks kept watch and ward over the sources of the Irrawaddy. Behind us was the huge bulk of the Gompa La. We were caught in a network of high rocky ranges, which gloomed and frowned on us even in the liquid sunshine. A vast convulsion seemed to have lifted the lid off the earth and broken the crust, and piled up the ruins in fantastic castles.

Presently we came to a small tarn, and, at 13,000 feet and in sight of Burma, sat down to the jolliest breakfast imaginable. We were hungry. Rice, flour, and meat we had, and cup after cup of hot tea. How good it tasted, basking there in the sunshine!

After breakfast I climbed a peak, whence I had a splendid view of the snow-peaks on three sides; southwards the mountains grew lower, till they melted into the opalescent sky.

Keeping to the glacier ledge, beneath the cliffs, we rounded a cwm and began to plunge towards the Taron. A break-neck descent, glazed with frost, brought us at length to the bed of a torrent 2,000 feet below. As we descended we passed through a knee-deep mixed scrub of Rhododendron in which four species were conspicuous: *Rh. brachyanthum*, whose leaves when rubbed emit an insufferable odour; one of the furry-leafed 'Hæmatodes' type; *Rh. sanguineum*; and one of the 'Saluenense' type (K.W. 5437, 5431, 5432, 5436).

The first shrubs to appear were a bulky species of the 'Fortunei' series (K.W. 5457) and a wiry 'Trichocladum.'

By the time we reached the valley, the Rhododendrons had grown to big bushes, chiefly a

woolly-leafed tree-forming species, 15 or 20 feet high (K.W. 5438), and dense thickets of *Rh. sanguineum*, with species of the 'Barbatum' and 'Heliolepis' type, all growing man-high.

The wealth of Rhododendron was simply astounding. It was wonderful enough to see them in their winter garb, sometimes with leaves relaxed, and with the cinnamon, or silver-grey, or mahogany felt showing up as the foliage writhed in the wind. But in the spring! I tried to picture what no white man has ever yet seen—this furore of blossom tumbling in the tree-tops, with the snow lying deep on the heights and the water leaping and crashing amongst the boulders.

At first there was quite a good path along the bank of the stream, but presently we were forced to clamber over the boulders in the bed itself. It was go-as-you-please. There was no hint of a path. The cliffs on either side grew higher and higher; the boulders grew bigger and bigger; and the valley grew steeper and narrower. Evidently we were approaching a big fall, the din of which was now audible.

Our guides were astray; in fact, helpless. One had not crossed the mountains for ten years, and the topography had undergone alterations and repairs since then. The other had gone a different way.

Obviously we could not continue further down the torrent bed. There must be a path up the cliff opposite. But as that was covered with dense forest, the path was not easy to find. It eluded our efforts for an hour, but at last some keen-eyed person hit on it.

By this time it was too late to go on. We there-

fore prepared to pass the night amongst the immense boulders in the bed of the torrent, and selected a small and fairly level patch of gravel for the purpose. There was plenty of wood here.

It was not cold, but the noise of the water arguing with the boulders was tiresome. I spent half an hour treasure-hunting. There was gold in the granite and porphyritic boulders.

When we awoke on October 25 we found it had not even frozen during the night—minimum 38° F. It was damp and cold enough, though, and I was glad to start. A long, rough ascent through dense forest brought us to the shoulder above. The trees, which were of huge size, were mostly oak, larch, Euonymus, and Pseudotsuga, all draped with moss and ferns. *Rh. niphargum* was the commonest Rhododendron, occurring scattered through the forest, and on an open granite cliff which faced south I found a stout bush of *Rh. bullatum* (K.W. 5439). On the same cliff, sun-dried in the hot glare, were the remains of a wee Primula (K.W. 5443).

More remarkable were the 30-foot ropes of *Rh. Edgworthii* hanging from the boles of the trees, to become in the spring a cascade of sweet blossom. One plant of it grew like ivy flattened against the cliff, and rooting at the nodes. The dumpy capsules, covered with soft cinnamon-coloured down, were blushing orange and scarlet. While *Rh. bullatum* grows out in the open, its close relative, *Rh. Edgworthii*, lurks in heavily shaded forest.

Presently we emerged from the forest, and there, right below us, the Taron river nosed its way through the valley. At this period we were quite 3,000 feet

above it. But what a puny river it looked, all the same! We were destined to be disillusioned.

We followed down the spur, through dry grass and bracken, slippery as ice. On our right the sheltered valley was filled with mixed forest; on our left the slope, drenched with sunshine, was an open park with scattered alder and pine trees. After a terrific descent we reached the first Kiutzu hut, and heard the Taron, still 1,000 feet below, growling and mumbling between high cliffs.

We halted at the hut for lunch. There was a single cabin, entered through a doorway only 3 feet high. The roof was of thatch-grass and the immense leaves of a forest tree; the walls were of split bamboo; the floor of planks. It was very draughty.

There were a man and an old woman here, the latter squatting in the ashes of a fire like Cinderella with her clothes off; for the Kiutzu go almost naked. In the afternoon we began a provoking march down the left bank of the Taron, but high above the river. The path was steep and narrow, buried in grass; falls were frequent. It was very hot too, so that we grew glutinous with sweat and oaths.

In about an hour we reached another hut. On a platform below, however, close to the river, there was a distinct village—three or four cabins within shouting distance of each other. After wasting an hour trying to find a path to it, we met two men carrying packs, who told us that it was deserted. The plagues of Egypt had descended upon it. Some one had contracted "ta-ma-feng," the symptoms of which were graphically described to me by Sere.

"What happens when you have 'ta-ma-feng'?" I asked him.

"Your fingers and toes drop off," he replied. "Your face falls in. You turn funny colours."

It sounded like leprosy, at least. Presumably the victim was still in his hut, shedding fingers and toes. Everybody else had fled in panic and hidden in the mountains till the scourge had passed. It was their only chance. Every hut within a radius of two or three miles was empty.

We decided to occupy an empty hut alongside the path. The little wooden door was tied up to the lintel, but the men got it open and I poked my head inside, only to withdraw it again quickly. The interior of the hut was effervescing with fleas. I slept outside on the hill-side that night.

It was difficult to find our way along the almost invisible track, with huts scattered high and low down the valley. But early next day two men came along, who offered to guide us.

They were naked except for a loin-cloth, and a blanket over the shoulders, and were covered with loathsome sores. They carried baskets of finely woven bamboo, full of wild honeycomb. My men bargained successfully for this delicacy.

Sere told me they—that is to say, the Lutzu—understood these Kiutzu quite well, and were equally understood by them; both are, in a general way, Nungs. But he also said that further south the people spoke a different language. Possibly he was referring to the Naingvaws.

We had not to march very far south down the Taron—only a few miles, in fact; but it took us over two days.

We were everlastingly climbing; down 1,000 or 1,500 feet to the bed of a stream, and up the other side; up a cliff and over the shoulder, then down the other side.

When we reached the next hut, the porters stopped to roast their honeycomb; then they extracted the fat white grubs, one by one, and ate them.

There were three families with five children living in this one little cabin. A patch of jungle had been cleared for cultivation, but I suspect the household were often on the verge of starvation. In the rainy season it is practically impossible to buy food here, and even now we could not bank on it. In the forest here I came upon two tree Rhododendrons.

In the afternoon, after a difficult traverse by a brutal path, we began to descend a shoulder to the Taron. It was desperately steep above, covered with dry grass, on which I slid and slipped; at last I sat down and slid deliberately—which was just as easy and much jollier than doing it unintentionally. Amongst the granite boulders grew masses of a very twiggy Rhododendron, a couple of feet high. It may have been *Rh. virgatum* (K.W. 5446).

The shoulder grew steeper and narrower, and finally ended in a cliff 50 feet high. We had to get down somehow. There was a creeper fastened to a rock above to hold on to, besides several foot-holds. I descended, clutching the cable and letting myself down gradually, fearful lest it should break.

The first porter tried to descend with his load on his back, but half-way down, with his heart in his mouth, he called to me to help him. I climbed up a little way, whereupon he unslung the basket

and, tilting it up, anointed my head with mango chutney. It was the only bottle I had with me, and it had just been opened. After that casualty I had to eat my rice ration neat.

The others now cut creepers, spliced them together, and made a rope, with the aid of which they let the loads down one by one, and presently we camped on a tongue of land between the Taron and another river which roared in from the Salween divide. Across the latter, on a small platform, stood a hut.

We had not been here long when visitors began to arrive. First a fat little woman with a basket of firewood, and scanty clothing. Her round, chubby face was woefully tattooed with blue spots and criss-cross lines; it formed a mask, sharply defined, extending from the angle of the eye, down the cheek to the chin, and round the mouth. She wanted to cross the smaller river, and we were introduced to the "monkey bridge" for the first time. Three or four separate cables, made of twisted bamboo, each no thicker than a skipping-rope, were tied to trees on either bank. The sportsman who wished to translate himself from one side to the other tied himself to a wooden slider, which he placed on this collection of ropes, and proceeded to haul himself across, hand over hand. Of necessity he hung underneath the apparatus, and so could push with his bare feet at the same time. The Nung woman, after trussing herself up, with basket, proceeded to give us a demonstration.

It appeared an undignified position for a lady; but her clothes, though inadequate, were adapted to this form of athletic exercise, for she wore a

very small and tight pair of bathing-drawers underneath her abbreviated skirt. Anyhow, she hauled herself and her basket of faggots across while we stared in dumb admiration at her brawn and courage.

The next character to appear was "Curly," son of the local chieftain. He was a typical Kiutzu, short almost to dwarfishness, muscular, and of a cherubic cheerfulness. He promised to take us across the Taron next morning, when the rope would be slippery with dew.

He was beautifully dressed in the shortest of bathing-drawers and a striped towel. Slung across his shoulder was a basket and *dah*, and, further, he was aggressively armed with a crossbow.

Enter, thirdly, a Lutzu of Tramutang, who chattered away in Chinese and proved a mine of information. He told me of a Chinaman domiciled at a village below, who would act as interpreter, and minutely described the road for at least two days' journey. So we decided to follow the river down to this village and there engage the interpreter and a fresh relay of porters for the next lap.

"Curly"—he had fuzzy hair, and was as ashamed of it as a schoolgirl—now left us and crossed the river in picturesque style, for he waved his legs up and down like the arms of a windmill, thus kicking his way across. We lay down under the stars (for it was warm here, after the Gompa La) and soon fell asleep.

Nevertheless, the morning was cool, with heavy dew. "Curly" turned up in good time, and others came with him to assist. He brought me a little millet and a couple of eggs.

We now went down to see the Taron, and a

*From a photograph by P. M. R. Leonard Esq.*

NUNG CROSSING A 'MONKEY' BRIDGE.

*From a photograph by P. M. R. Leonard Esq.*

NUNGS FROM THE REMOTE N.E. FRONTIER.

magnificent sight it is at this point. From high up on the range it had looked feeble enough; but now we saw it as it really is, savagely beautiful. It seems to smile at you in its velvety-green gorge, but all the time a fierce lust lurks in its hissing water. It is ruthless.

We struck the Taron in about latitude 28°; and it was only a few marches north of here that poor Pritchard was drowned in 1913, while trying to trace the river to its source. The upper portion between the point where Pritchard was drowned and the point where Major Bailey crossed the Taron in 1913—a distance of roughly 50 miles—still remains unknown.

Captain B. E. A. Pritchard, of the 83rd Wallajabad Light Infantry, was one of the most courageous explorers who ever ventured into the fastness of the Irrawaddy jungle. Nothing daunted him; he was a thruster, almost aggressive in his determination to carry through to success whatever journey he embarked on. His work has never been adequately recognized; but no Englishman can look upon the savage Taron without thinking of the brave life that was sacrificed to it.

The "monkey bridge," by which we had to cross, looked ugly. It was about 80 yards long, composed of four separate ropes, wet with dew. However, I did not need to exert my strength, because I was tied to "Curly" by a rope and ignominiously lugged across like one of my own boxes. This saved trouble, but the method of crossing is not comfortable. Your Nung passes a loop of rope under his thighs and another round his forehead, and in this ludicrous, not to say painful attitude,

hauls and pushes himself across with incredible speed. I was spared the head-rope, which the experts were graciously pleased to tie under my shoulders, and "Curly," being a young man of vigour and strength, hauled me over in fine style.

At this point the Taron flows in a glorious gorge, forested to the water's edge. The current is swift, and continuous rapids fill the gorge with sound. The sunshine was just peering in, sparkling on the ripples, but half the river was still in shadow.

Just above the "monkey bridge" is an island, connected with the left bank by another rope-bridge.

We now proceeded down the right bank of the river, climbing high up the cliff by a rickety path. "Curly," who was acting as guide, kept close to me, and, whenever I slipped, clutched me desperately. After some very awkward cliff-climbing, we descended to the river again and marched over boulders in its bed. The semi-tropical forest was most impressive. The tree-trunks were muffled with strange creepers, ferns, orchids, and moss. Everywhere grew trees of the most varied description, including species of Ficus, alder, and oak, covered with masses of ivy, Agapetes, Æschynanthus, Clematis, and Akebia, most of them in flower. In the thickets a species of Gynura and Senecio sprawled, and the rocks were carpeted with the velvety leaves and pale yellow, pouting perianths of a Chirita. But despite the tropical appearance of the forest, due to the very heavy and persistent rainfall, there were few tropical elements at this altitude. Big-leafed, palm-like Araliaceæ there were, and bamboo, and clots of pink-flowered Luculia; but the exposed slopes were clothed with

grass and bracken and brambles, amongst which were scattered alder and pine trees.

In the middle of the day we came to a second "monkey bridge" and a few huts scattered along the left bank. "Curly" left me to cross to the village and call the headman and the Chinese interpreter, and we went on a short distance and camped on a sand-bank, beneath a huge boulder.

In the evening they came—the headman, pleasant-faced and urbane, and the domiciled Chinaman, wizened and loquacious. I told them I was bound for Muwang (that is, Hkamti Long), and that I required seven porters and an interpreter. They promised to come early the following morning and arrange everything satisfactorily for me.

My Lutzu porters had now fulfilled their contract, having stood loyally by me for ten days till I could engage a new lot. They were discharged with honour and pay; but they, too, had to remain a day on the sand-bank, in order to collect food from neighbouring villages for the return march.

I was assured that there were villages on either bank, higher up; but not a hut was visible anywhere.

Night came, and the sky was spattered with luminous star-dust, which seemed to fill up the spaces between familiar constellations. The river smashed over the rocks with a terrible roar, and the hissing water was flaked with silver in the moonlight. A fire-fly went winking through the trees. However, the temperature only fell to 47°, and on the following night 52° was the lowest recorded.

Next day, October 28, was a day of rest. There was a heavy mist over the river when we woke

up, but it was soon dispersed. From time to time parties of Kiutzu came by, carrying baskets on their backs; many of them were naked except for a loin-cloth. But, on the whole, the Kiutzu of the Taron are better off than those of the more remote valleys, being accessible both to Chinese pedlars from the Salween and to Tibetan traders from the north. Both parties assess them for taxes, and neither party does anything for them. Whether the tax-gatherers are accredited or not is another matter altogether.

The Tibetans bring them clothes, *tsamba* bowls, tea, and salt, in exchange for skins, and perhaps gold-dust. The Chinese pedlars also bring them clothes and salt, besides iron cooking-pots, and take away with them cane baskets and various 'medicines,' such as *hwang lien* (the root of a plant, *Coptis teeta*), and *pai mu*, the bulb of an alpine Fritillaria (*F. Delavayi*). From the Dulengs and the Shans they get their straight-bladed soft iron knives. They weave their own blankets and make their own crossbows.

It is certainly curious that no less than three empires should have laid claim to this wild valley. China claimed it on the rather shabby plea that she was the first to oppress the Kiutzu—taxation without compensation is sheer oppression. Tibet claimed it on the ground that she had long been accustomed to extract slaves from that region. Britain's claim rests, in part, on the perfectly absurd ground that the inhabitants want her to take it over.

I spent the day botanizing in a perfect paradise, and collected a number of rare or unknown plants.

In the forest, and on the rocks lining the river bed, were many Rhododendron bushes, such as *Rh. ciliicalyx*, *Rh. crassum*, and *Rh. sino-Nuttalli*, all of which belong to the 'Maddeni' series (K.W. 5447, 5448, 5466). Climbing plants abounded. Besides those mentioned, there were the thread-like stems of Crawfurdia twining in neat spirals round the bamboos—the pendent flowers are a rather washy purple, but the little dangling polony fruits, filled with black bead-like seeds embedded in a white sponge, are quaint—and lanky golden-flowered Senecio and other Compositæ.

Masses of a shiny-leafed Crinum grew amongst the piled-up boulders, and on the alder trees were orchids, some of them in flower. There was plenty of bamboo in some places, and where the steep slopes were not covered with forest grew thistles 15 feet high.

The Kiutzu came, and with them the Chinese interpreter. Everything was arranged satisfactorily. We were to start on the following day for the Tazu (the Chinaman called it Dechu), and the interpreter was to accompany me to Hkamti.

My men bartered salt and cotton yarn for food, cane baskets, and bamboo cups. Then they loafed for the rest of the day, and, sitting round the fire, fashioned cunning pipe-bowls from the roots of the bamboo.

We turned in early, as the sand-flies were rather troublesome.

## XII. OVER THE TARU TRA

THE Kiutzu did not hustle themselves, and it was getting on for noon when the interpreter and the Chief leisurely rolled up; the latter brought one or two of his wives with him. "Curly" joined us from the village above; also an old man, with his skin in creases, and three other young fellows.

First of all they wanted to do business, and inquired what I was prepared to pay for certain articles of diet, none of which were in sight; for the Kiutzu salesman never produces anything until he has aroused your curiosity, cupidity, or contempt. A fowl was mentioned, and in the same connection two rupees. Having some Yunnan money left, I hoisted the argument on to a loftier plane and spoke pityingly of half a dollar—nominally one rupee. This was accepted with such alacrity that it was obvious an Indian rupee did not purchase more than twenty cents worth of goods from the astute Chinese pedlar.

The Chief now retired a quarter of a mile and conjured from under a rock, where they had lain in ambush, the said fowl, cane baskets, and other exciting objects. The fowl was certainly a bonny one, and, as it had to last me a week, I was glad of it.

All fiscal matters having been satisfactorily adjusted, I gave the porters an advance of wages and the loads were quickly tied up. To my surprise, the Chief himself carried a load, his ugliest wife another; and with "Curly," "Old Man," and three stout youths, besides the interpreter, our party was complete.

I took a touching farewell of "Mr. Gold" and his henchmen, and, about one o'clock, we pushed on. Simultaneously the Lutzu started back for the Salween.

For a few miles we followed the right bank of the Taron. Here in the rocky river bed I found two plants of *Rhododendron sino-Nuttalli*. It is a slim tree of 15 to 20 feet, with smooth bark. The three- or four-flowered trusses are borne freely amongst the large leaves, which are beautifully bronzed beneath, with prominent veins. The capsules are 3 inches long and 3 inches round at the base, tapering slightly. The seeds, which are a rich mahogany brown, have a peculiar unctuous feeling, like soap-stone.

Presently we turned off and ascended the flank of the range. Severe climbing brought us in time to the ridge of a great spur, blocked out of the range by the Tingdam wang, which enters the Taron lower down.

Then began a tiring traverse along a hidden path. It was necessary to duck one's head and butt a way through the tangled thickets; of course, one not infrequently missed the path altogether and rolled over the *khud*. After an exasperating march, we reached the last village—three huts only, all of them deserted. Their owners had moved, bag

and baggage, to the Salween, leaving behind them only their huts. Thus do the tribes migrate, wholesale. There is a village here one year; next year it has ceased to exist. Famine and pestilence seem to be the chief agents of dispersal. The village is called P'kra-mareng. A heavy shower swept across in the evening, otherwise the weather remained fine.

The Kiutzu are apt to be sluggish in the morning, so we did not start early. There had been a thick dew, but the sky was perfectly clear. More traversing, and then a violent descent to the torrent rumbling over the granite blocks between sky-scraping cliffs fledged with forest.

On the way down I found several tree Rhododendrons of the 'Irroratum' type (K.W. 5474). It must be a fine sight in flower, for the trees here were 20 to 30 feet high, with numerous trusses carrying from fifteen to twenty flowers each. Another interesting plant was a species of Akebia, one of the climbing Lardizabalaceæ, an order peculiarly distributed between Chile, Japan, and China, to the Himalaya. The black seeds were embedded in a sweet edible pulp, the whole packed in a long, thin sausage.

In the gorge of the Tingdam wang, however, the vegetation was decidedly tropical. There was a tree here with bunches of fruit like a mountain ash (Pyrus); but white and viscid, resembling in that respect mistletoe berries. The men ate these with great gusto; and, truth to tell, so did I, since fresh fruit was not to be despised. They were very sweet and refreshing.

There was a "monkey bridge" across the gorge,

but it was out of sorts, and a temporary bamboo footbridge had been erected.

After lunching in the river bed, we crossed over and entered the forest, climbing again. At one point a diversion had been made through the dense undergrowth. Seeing no advantage in this, I was about to follow the path when some instinct suggested that the diversion might be there for a purpose. A few minutes later I caught up with the porters; one of them tapped me on the shoulder and pointed back. A large paper nest lay full in the path, with several formidable hornets skirmishing round it. The alert jungle man had seen something unobserved by me.

Half an hour after leaving the river, we halted under a cliff, though it was only two o'clock. There were quite a number of small birds twittering in the trees, and the men tried to kill them by casting sticks at them. They tried to kill everything they saw—a weasel, a rat (they did kill and roast a rat later), or a squirrel. We had a most exciting chase after a chocolate-coloured weasel, but it eluded us. I wanted it for a specimen; they for a meal, or, perhaps, for medicine.

At six o'clock we took our evening meal. That of the Kiutzu consisted of broth and boiled millet. The broth, made with bean-curd, a few slices of meat, and a peculiar grain resembling black soil, was boiled in one cauldron, and the millet in another. If any edible leaves or toadstools were collected during the day, they were added to the broth, together with salt and red pepper. They also made buttered tea, such as the Tibetans drink; but after the first two days meat, butter, *tsamba*,

and tea were all finished, for they are reckless folk.

Tender love-scenes enacted between the Chief and his girl-wife—she looked about sixteen or seventeen years of age—were very amusing. She was an ugly little thing, her dumpling face grotesquely tattooed with dots and crosses; and she simpered. In spite of her dog-like faithfulness, which oozed from every pore as she gazed on her lord and master, he treated her with disdain. She was squeezed out of the ring round the fire and given a place out in the cold; but she was content to lean against her lover. The mangiest scraps of food were given to her—but she was content to eat the crumbs which fell from her master's moustache, and drink the dregs from his wooden cup. But sometimes he gave her titbits, and then the love-light in her eyes would have wrung tears from a mangle. Also she was excused the hewing of wood and drawing of water, and our gallant always lifted her load on to her back when we started in the morning; for the Kiutzu carry their loads by a band passing round the forehead.

Kiutzu girls are tattooed between the ages of ten and eleven. It seems to have no special significance now; but the Kiutzu have always been the prey of their more powerful neighbours, and the original reason may well have been to render their women less attractive to strangers. To this day the Tibetans of Tsarong carry them off into slavery.

The style of tattooing differs in different valleys. In the Upper Taron a complete mask of dots and zigzags is rendered in indigo blue—dots on the cheek and chin, a zigzag line along the upper lip, and criss-cross lines between the eyes. In the

Tazu Valley, on the other hand, and also on the Nam Tamai, a few curved lines are drawn from one angle of the mouth to the other, sweeping round the chin ; and a wee circle on the tip of the nose adds the finishing touch. These discriminating styles of adornment—or disfigurement—might well be the starting-point of distinct clans. My experience was that tattooing diminished as one travelled westwards. The men, by the way, are never tattooed.

Before we went to bed (nine o'clock was bed-time) "Chief" plucked an orchid leaf for purposes

Nam Tamai. Taron.

TYPES OF TATTOOING, NUNG TRIBE.

of divination. Slitting it into ribbons, which he combed between his fingers and tied into knots, he next flicked it over his shoulders and waved it about generally, at the same time muttering incantations. Owing to mysterious properties inherent in the leaf, and to the manner in which the ritual was performed, he was pleased to be able to inform us our journey would be a prosperous one. We thanked him.

October 31 was a day of hard travel, with fierce ascents and descents as we followed up the Taru wang, a branch of the river crossed the previous

day. We kept pretty high above the stream, with the naked granite range dead ahead. Even in the dense forest certain trees were easily marked down, and I noted several oaks, Bucklandia, Magnolia, Michelia, and a Schima with creamy flowers, besides many tall, tree-like Araliaceæ, with immense palm-leaves.

In the middle of the afternoon my interpreter, Chao, suggested a halt for the night; it was not a very likely-looking spot. I therefore suggested that we go on. "How far is it to the next camp?" I asked.

"Two halts," replied the Chinaman suavely, sucking at his pipe.

That did not enlighten me much. The Kiutzu sometimes marched nearly an hour without resting, sometimes scarcely fifteen minutes.

"Shall we arrive before dark?" was my next question in pursuit of knowledge.

"About dusk," said he; and on we went.

At dusk we did come to a good camp, where a huge granite block afforded shelter.

It was delightful in these wide, resounding forests, with nothing to worry us except a superfluity of ticks. These devilish Arachnidæ stab shrewdly with barbed proboscis, and are difficult to detach without leaving their weapon embedded in the flesh. Having pushed this saw-edged bayonet into you, they proceed to suck your blood, and, if undisturbed, will continue till swollen as tight as a drum and six times their ordinary size.

A wonderful variety of trees and plants, ever changing as we climbed higher, greeted us. Magnolia, Michelia, oak, Rhododendron, birch, and other

NUNG WOMEN.

*From a photograph by T. Hare*

trees abounded; orchids, ferns, and climbing plants hung from the branches in long festoons, and a surf of undergrowth rippled round us in the breeze.

On the granite cliffs, and growing on some of the trees, were plants of the box-like *Rhododendron sinovaccinioides*, but I could find only two or three ancient capsules without seed. The flowers are tiny, and the plant is only interesting as the farthest eastern representative of the Sikkim plant.

We were in an open forest of *Rh. sinogrande* and huge Pseudotsuga trees. The Rhododendrons were gnarled, with heavy crowns bearing aloft a complete canopy of foliage.

November 1 saw us struggling up the bed of the torrent. It had rained in the night, and the weather looked far from settled; happily the range ahead did not much exceed 12,000 feet, and the pass was under 11,000 feet. The porters were always game. "Old Man" generally led the way, with "Curly" not far behind; and though they halted for a rest and a smoke at every convenient place, on the whole they marched well. These frequent halts gave me ample leisure to collect plants, and I was content when the march was only a short one.

The Kiutzu were highly diverting. No sooner had they slipped their loads to the ground than out came the bamboo pipes. "Puff, puff," chatter; "puff," chatter, chatter; and so it went on. After fifteen or twenty minutes, I grew impatient, and said so.

"Come on!" said "Old Man." ("Puff, puff.") Not a sign.

"Come on!" said "Curly." ("Puff, puff.") Still no one moved.

"Come on!" said "Chief." ("Puff, puff.")

His wife sat silently by his side, leaning against him. She gazed up at him with her little pig eyes scintillating love, stroking his arm with her little monkey paw, and with a settled simper on her little crocodile lips.

At last "Chief" knocked out his pipe and rose, and the others with him. He lifted the girl's basket (she was carrying my botanical press), and, twisting round, she slipped the band over her head. Then "Chief" stooped to his basket, which he had balanced on a rock, and straightened himself up slowly; but "Curly," who was carrying my collecting-box with the silver rupees in it, sat on the ground and, having adjusted the head-strap, grunted and heaved at the weight without result, till some one gave him a hand and pulled him to his feet. Then they plodded off in single file, "Old Man," carrying a wooden-shafted spear in one hand, leading, and Mrs. Chief close behind Mr. Chief.

"Curly" was a bit of a wag in his way, and merrily did he turn me from wrath to laughter one day when my only tin of millet was upset during lunch, and the grain scattered over sticks and leaves and mother-earth. Frenziedly he began to tear up the ground and fling it into a large sun-hat, in which he skilfully winnowed out the precious grain with exaggerated care, amidst the laughter of the company.

He was, too, a dandy, and spent no small amount of time combing his curly mop with a Chinese comb. His joy was great when, one morning while busy at his toilet, I tossed over to him my looking-glass. Then, indeed, did he preen himself!

After passing through a wonderful tanglewood of

Rhododendron, we crossed the torrent and proceeded cautiously up a steep-sided valley, marching straight on the granite wall; and it was a wall too!

The Rhododendrons were, if possible, more prolific here than ever. They formed a solid wall of bushes lining the stream. I was too bewildered to do anything but clutch bunches of capsules and stuff them into my bag. One wizened epiphyte, *Rh. tapeinum*, or *Rh. megeratum*, perhaps, was in flower—a poor thing with bright lemon rather fleshy corolla and brick-red anthers.

Rain came on, and we plunged into that unholy growth, dwarf bamboo. Quite early (though drenched) we scrambled up the scree to our night's lodgings; the interpreter said there was no shelter higher up, but he was mistaken—intentionally, no doubt.

So cramped were we in our wretched hole, which was completely open to the weather, that five of the porters, after depositing their loads, went off to huddle under another boulder some distance away; only "Curly," Chao, and another man shared diggings with me. It was draughty and moist.

The rain drifted in and water dripped from the roof; gusts of damp wind howled peevishly in our ears. The firewood was thoroughly sodden, and, when we at last got the fire going, we were almost suffocated. "Dodging the fumes" was elevated almost to the giddy heights of a pastime; it meant lying on the rock with your head hanging out over the edge of the shelf. A constant drip of water down your neck supplied refreshment, and the streaming eyes of your companions doubtless indicated sympathy. Still, we had to have a fire to cook our

supper. Besides, it was cold now—we were camped at an altitude of 10,000 feet; so we did the best we could for ourselves, knowing that it was just as difficult to find suitable lodging in Piccadilly as it was in this morose gully.

The view from "Smoky Hollow" was about as disagreeable as any view could be. A clammy mist rolled bleakly up the valley, shedding rain as it passed. Through the colossal murk, fantastic cliffs leered and vanished; it might have been here that the magic bean germinated inexhaustibly, for behind that barrage of spires, 2,000 feet overhead, surely lay a new world! It was a fit place for giants too. The bamboos, loaded with moisture, the russet and lemon foliage, which was the tattered livery of half-naked trees, and over all the swirling mist, made the gloom complete. Water dripped and dribbled everywhere, and streams whined in every couloir. Yet after dark the clouds disappeared, and the bald grey battlements were grimly etched against the cold star-dust.

"It will be fine to-morrow!" said the interpreter optimistically; but, as usual, he was wrong.

As for me, I went on with my fowl. It had to last out the week's journey, and, like a Chinaman, I wasted nothing but the feet and feathers. But at the end of five days there was nothing left; I had eaten it neck and crop!

After a cold night (minimum 37° F.) we were glad to start, despite the ordeal of butting through the surf of bamboo. A terrific shower-bath greeted the first step, and, blundering along, I was soon drenched. Drifts of snow whitened the mountain, and the sky was ominously grey.

Presently the trail disappeared completely and we found ourselves in a dry torrent bed, between hedges of impenetrable bamboo; a chaos of boulders, on which grew bushy clumps of *Rhododendron brachyanthum* (K.W. 5481), bewildered us, but our guide and one or two others knew the way. Right ahead frowned the semicircular wall of the cwm, like a huge collar of stone, rising in sheer slabs for a thousand feet. Its rim, level as a balustrade, afforded no visible notch by which we might cross, neither did its smooth face afford a visible route to the summit. Still, there was a way somewhere.

The structure of the high valleys on the Taru Tra is always the same. There is no hint of ice action, and the curiously clean bite in the range is due, apparently, to an immense accumulation of snow filling the cwm, and spouting water from its apex throughout months of thaw. The snow blanket protects the rock, and the stream cuts a channel for itself in the centre.

At the very foot of the wall we turned abruptly to the right and, tramping over a carpet of woolly-leafed ' Hæmatodes ' Rhododendron, which formed spreading foot-high tanglements (K.W. 5484 and 5487), began to climb an abominable scree. There was a notch right above us, where the collar-like wall joined the buttes and spikes of a broken shoulder; but, so steep was the slope, it seemed hardly accessible. We were by no means quit of the bamboo atrocity—that ogre which the North-East Frontier, in the convulsions of parturition, brought forth piecemeal at each pang. Scaling the cliffs, we came to where the snow still lay, and again the air was thick with whirling flakes. Soft wads,

flopping off the bamboos, went down my neck, filled my ears, and made me cross. So steep was the track near the summit, that stones clattered down the cliff behind us at each step, and it became necessary to move one at a time.

Two hours after leaving camp, we stood at the top of the Taru Tra, 6,129 feet above the Taron, or about 11,000 feet above sea-level. It was merely a razor-edge, so narrow that we could almost straddle it. The view westwards was wide and shining, and full of a soft wetness. A lather of cloud frothed up over the jostling ranges, and long strips of mist lay between like packing, and presently the sun shone out through the tears.

"That's Muwang over there," said my interpreter, pointing in the direction of—well, Moscow. A pale blue shadow, filming the horizon, was certainly the Brahamaputra divide.

"That's India!" I replied confidently. "Muwang is over there, in that great gap"—and I pointed to where the mountains sloped far down, about 120° from the direction in which he was looking.

"Is it?" he asked dubiously. "It is very far away." He was breaking to me gently the fact that he had already had enough.

The bamboo on this side was even worse than on the other. The solid stems grew 8 or 10 feet high, and so thick was it that nothing else would grow under its accursed shadow. Small wire mats of a Saluenense Rhododendron (K.W. 5482) sprawled pathetically over boulders and ledges disdained by the bamboo; but it had set no seed here. A few hundred feet lower down, however, it formed sub-

stantial brooms, and I gathered seed of it. These creepy-crawly Rhododendrons are satisfactory for a big rock-garden; but they are not Rhododendrons within the meaning of the word. They are botanical curiosities rather than self-respecting plants. *Rh. calostrotum*, another species of this alliance which I brought back from the North-East Frontier of Burma a few years ago, created quite a sensation in England; but one would not recommend it amongst the first dozen Rhododendrons for the garden.

At the foot of the first steep pitch we came to an open boggy pasture, where grew scattered bushes of a 'Trichocladum' Rhododendron (K.W. 5489). They are seedy-looking objects, these Trichocladums, with deciduous leaves and pallid yellow flowers, often with an unhealthy green flush and a rash of poisonous spots. The flowers open before the leaves appear, when they look the most starved and twiggy skeletons imaginable. However, some people approve of them.

As we plunged down towards Indo-Malaya, the murmur of the myriad streams, which the Irrawaddy gulps greedily down, seemed to float up to us through the velvet jungle. Down, down, we went over the rock-slabs, through bamboo and Rhododendron. A trickle of water appeared, and presently rills came sluicing down the mountain scuppers, and the rills grew into becks, and the becks became torrents, and the vast forest flung open its arms to us, hugged us in its merciless embrace, and swallowed us up; and still down, down, we dropped, till at last all the water was gathered together and crashed amongst the boulders in one devastating deluge; and we halted for lunch.

The last thousand feet of the descent had been by an atrociously steep and narrow ridge. The vegetation here, however, was in marked contrast to that of the valley by which we had ascended. There was still plenty of bamboo, but it was no longer predominant. Big Conifers and a glut of shrubs—Enkianthus, Viburnum, Rhododendron, and many more—clothed the slopes. Amongst the Rhododendrons were *Rh. sinogrande*, *Rh. niphargum*, and a small tree with coppery-red stems and flaking bark (K.W. 5483). This last—one of the 'Hæmatodes' phylum—though a small gnarled tree fully 20 feet high in the forest, occurred also as a low-growing tangled shrub not exceeding 5 feet at loftier altitudes.

Even more remarkable was *Rh. Martinianum*, with rosy-pink flowers actually open, though, it must be confessed, they looked a little blue with cold. It is a small bush, and of no special merit that I could see. I had collected seed of it on the Gompa La, under the number K.W. 5434.

Rain and hail began to fall, and through the mist we saw looming the ridge we had just crossed, very white with snow.

In the afternoon we continued a straightforward descent through the forest. It was rough going, but not arduous, and at four o'clock we halted under a monstrous mass of granite, big enough to shelter an entire platoon. The sloping roof was far above our heads and projected many feet, being perfectly smooth, with a straight edge 100 feet long. Through long ages this block must have rested here immovable, for it bore great trees on its back; and I wondered what terrible force could have

thrown it down from the mountains. No mere storm, nor all the streaming rain of the monsoon, could budge it now; it would require nothing less than an earthquake. And if it did tilt over at the trembling of the mountains—well, those beneath it might rest proudly under such a tombstone!

At dusk a thunderstorm swept up from the depths below; the thunder echoed and re-echoed amongst the rocks, but no rain came into our shelter, which was far more dry than many a Kiutzu hut.

The storm cleared the atmosphere, and when we started at eight o'clock on November 3 the air was fresh and invigorating. This unwonted alacrity on the part of my porters was due to the fact that with breakfast they finished the last of their supplies. They must either reach the village or go hungry. "Curly," however, contrived to kill a jungle rat in the night, and, having first singed the fur off it, roasted it whole in the ashes, till it was burnt almost to a cinder, and then ate it. The descent, though steep, was still easy, but the roots and boulders were slippery. I fell frequently. But that was because I went along with my eyes anywhere but on the path. On the rocks were various Gesnerads in seed, with ferns and species of Impatiens, and occasionally a Primula bud, like a brussels sprout. The epiphytic *Rhododendron tapeinum* was also common.

Though collecting plants kept me behind, I was beginning to pick up the art of tracking in these trackless forests, for often there was no path visible. A leaf pressed down, a stone or a root with the moss worn off it, the faint mark of a bare foot on gravel, were to me by this time gross and

palpable signs ; my wits, my powers of observation, were being sharpened by necessity.

At last we emerged from the twilight on to the wide, white stairway below, where the torrent dozed amongst a jumble of boulders. But first we rested in the sunshine, for there was a bee's nest in the forest opposite. And while we rested, several dwarf Kiutzu appeared from below, on their way to the mountains to search for medicines such as the Chinese love.

The glistening boulders contained much ore, and I amused myself hammering off chips to take home and promote companies with !

Looking up this steep avenue torn through the massive jungle, we glimpsed high up the razor-edge of the Taru Tra, glittering against the turquoise sky. All was cold and lifeless up there, so the wizened stream, too small for its trousers, had fallen into a deep sleep ; it gave no hint of the Procrustean fitting to its bed it would endure presently. For a few months yet it might snore on. Then one fine day it would awake with a start, and rouse itself. No longer would it be content to creep furtively amongst the boulders and turn aside, but would batter against them, lift them up, and hurl them breathless one against the other till they rattled together like dice. A reckless fury would seize it, and the measure of its rage would be the rumble of the dancing stones as the spate pounded headlong down the stairway ; and its voice would be heard far off, echoing from rock to rock, till baffled by the woolly forest.

Then on down the stairway for a short distance, and so back into the gloomy forest till the torrent

became inaudible and we entered upon the warm, wet jungles of Indo-Malaya. Here were fig trees with bunches of chubby fruit dangling from the trunk like some strange excrescence; bird's-nest ferns, forming large green shuttlecocks drawn up, rank by rank, on the lower boughs; and high up out of sight an epiphytic Rhododendron, whose fragrant milk-white corollas strewed the ground. Across the valley we could see tree-ferns, their lozenge-patterned stems snake-like against the overwhelming jungle; and as we came down to the first cultivation, the huge fronds and tasselled inflorescence of the sago-palm caught the eye.

We halted for lunch, but the Kiutzu were impatient to get on to the village, for their lunch consisted only of some toadstools they had picked in the jungle; and in the middle of the afternoon we reached the first huts of Tinang.

## XIII. AMONGST THE DWARFS

WE were now in the valley of the Tazu wang, though some height above the river itself.

Heavy rain fell that night and continued on the morning of November 4, the thatched hut leaking badly. I was tired after the mountain journey and intended to rest a day; moreover, I supposed it would take time to collect seven porters, as there was no other hut in sight. But, as a matter of fact, Tinang was just the usual type of Kiutzu village, boasting, perhaps, half a dozen widely scattered huts, and the news of so startling an event as the arrival of a white man did not take long to go the round. Early on the morning of November 4 our hut was full of sightseers.

I paid off the Taron porters, who straightway went to seek food for the return journey. Meanwhile, my interpreter had beaten up a fresh relay, prepared to start then and there. So I agreed to a short march. But Chao himself held back. He did not want to go on.

"It is too far to Muwang," he said. "The Tarons are returning, and I am afraid to cross the Taru Tra alone."

"You promised to take me to Muwang," I protested. "I am paying you your own price."

"Yes, but I am afraid, sir! Suppose it snows again!"

"Well, take me as far as the 'big road,'" I said, resigned to the unreliability of the Yunnanese. ("The big road," it may be remarked, is the road cut from Fort Hertz to the Lower Taron by the civil authorities.) "When we reach the 'big road,' I shall have no further difficulty. You must take me to a village, and tell the headman I want to go to Muwang."

"I will do that," replied Chao. "To-morrow we shall reach the 'big road.'"

The rain had just ceased when we started at ten o'clock. We plunged down through high grass, and, after passing a couple of huts, whose inhabitants, of course, flocked to get a glimpse of me, reached a formidable river, or torrent—nothing less than the torrent we had followed for two days from the Taru Tra. This we crossed by a cane bridge, and immediately afterwards entered the forest.

These cane bridges, which must not be confused with the "monkey bridges" previously described, are cunningly made of the rattan or climbing palm, many of which we now saw, squirming through the forest; for they grow to immense lengths, sometimes as much as 600 feet. The main cables are bound to trees on either bank, the footway, consisting of two or three canes lashed together, being further supported by strips of cane twisted to the main supports. The whole forms a sort of open-work hammock. I crossed gingerly, sliding one foot in front of the other; for the bridge wriggled under me with a sort of peristaltic motion disconcerting to the tyro.

Afterwards we ascended a mountain, and presently found ourselves on a lofty ridge; thence through dense forest, rich with tropic trees and climbers. The orchids were coming into bloom, and many a quaintly shaped flower glimmered high up in the tanglewood.

Lastly, we came out on to an open ridge, forested on one slope, but covered with bracken on the other. Below us to the left was a big valley lying north and south, but turning away to the west opposite where we stood, so that we looked along it; to the right was the valley of the Tazu wang, which joined the larger valley at the corner. I knew that the Tazu flowed from the north.

"What is the name of the big river?" I asked Chao, pointing to the deep valley. (The actual river was not, as a matter of fact, yet visible.)

He held consultation with the Kiutzu, and then, "The Kiu-kiang," replied he.

I had expected no less. A week ago we had left the Kiu-kiang—the Taron River, flowing due south, to cross the Taru Tra, the great rocky range which hems it in on the west. But, after flowing south for another 50 miles, the Taron sweeps round the end of the range in a great curve, and, not content with that, bends back on itself, flowing almost due north for a short distance before breaking away westwards again; so that, travelling south-westwards, as we had been, we struck it a second time. Nevertheless, it was astonishing to see the very same river we had recently left roaring southwards with the utmost determination now come galloping *out* of the south, to our confusion. We stood high up on the spur, which sloped down to the corner

where the river turned for the second time at the Tazu confluence.

Descending a thousand feet, we saw across the Tazu Valley, on the right bank of the Taron, a reddish ribbon winding along the hill-side; it was the "big road" from Hkamti Long. I sat and gazed at it a long time, and at the Taron, now in full view.

Quite early we reached a village of two huts, just off the ridge. We had been marching only four and a half hours; but the men refused to go on.

The Kiutzu huts, in these semi-tropical valleys, where bamboo, cane, plantain, and sago-palms flourish, are different from those of the dour Taron. The walls are of split bamboo and the broad, half funnel-shaped leaf bases of a palm; the roof of grass-thatch. They are raised on stilts and divided into small rooms, an improvement on the wooden cabins previously met with. On the other hand, the people are hard up for clothes, and the men invariably go about naked except for a truss tied round the waist with string: this from the day they can toddle. Women and girls wear a short skirt, and decorate themselves with hoops of rattan, worn round the waist and round the calf; and sometimes they wear bamboo tubes through their ears, metal bangles, and bead necklaces. Everybody possesses a striped towel, home-woven, but this is not worn in the daytime—at least not during working hours. When in use it is wrapped round the shoulders or fastened diagonally across the chest.

The peculiar tattooing in vogue on the Tazu and Nam Tamai has already been referred to; as a rule, the lines which surround the lips are very faint.

Outside this village a pullet, held by the neck in a split bamboo, and some egg-shells balanced on sticks stuck in the ground, showed that the *nats* had been misbehaving themselves. It was, as a matter of fact, the first sign of religious enthusiasm we had seen.

Chao came to me first thing in the morning to say good-bye.

"You will be all right now," he said. "There is the 'big road' which will take you to your own people. There are rest-houses at every stage." He called the porters together then and explained to them what they had to do.

I was rather aghast when the time for actual parting came; Chao had served me pretty well. "What about food?" I asked. "You must buy me a fowl first!"

"They haven't got any here, sir."

"Then tell them to buy me one at the first village they come to."

No blandishments would move Chao to alter his decision. Before he left, Chao begged me almost with tears in his eyes to give him my looking-glass as a parting gift; but neither tears nor reason prevailed, while I was feeling so sore at Chao's decision. I found that he had kept on one of the Tarons on his own responsibility, and when I asked him what for, "I am trading with the people of the Tazu," he said shamelessly; and he showed me a great roll of Tibetan cloth which he carried in his bedding. In short, he had never intended to accompany me to Muwang.

His defection was a serious jar. Not only was I left without a servant, but also without an inter-

preter. Of course, I should reach Muwang—there was not the slightest difficulty on that score; the Nungs (as I must now call them, since once on the broad highway, I was very definitely on the North-East Frontier) appeared anxious to help me all they could, and never was I more loyally served. But it was painful to pass through this wonderful country without being able to ask questions.

However, I was engaged primarily on a botanical reconnaissance, and plant-snatching required no catechism. An illustration of what could be done in this line occurred during the luncheon halt. Happening to glance up, I caught sight of the milk-white blooms of an epiphytic Rhododendron high up on a neighbouring tree; the very plant whose discarded corollas I had picked up in the forest two days previously. It required no command of language to convey to the porters that I coveted those blooms, and that it was up to one of them to procure a specimen for me.

The tree was an isolated one, but an enterprising Nung, though he showed no great enthusiasm for the job, tackled it, and, laying hold of the creepers which clothed the trunk, hauled himself up 40 feet in fine style, reached the prize, and, breaking off several branches, threw them to me. I confess I was astonished, for I had credited him neither with the skill nor the courage to perform such a feat. This plant was *Rh. dendricola*, a species I have discovered further south in 1914. It is one of the 'Maddeni' Rhododendrons, a group which includes the well-known *Rh. Dalhousiæ* of Sikkim, which also grows in the tree-tops.

We scrambled down the steep ridge to the Tazu-

Taron junction, and found ourselves on the "big road." A long, sagging 40-foot cane-bridge spanned the Tazu wang just above its junction with the Taron, and we crossed one at a time.

The Tazu is a small but remarkably picturesque stream flowing from the north, the second of the four rivers which unite to form the 'Nmai kha, or eastern branch of the Irrawaddy. The 'Nmai kha in turn joins the Mali kha, or western branch, at "the confluence" above Myitkyina. The Taron, coming up from the south, round the high cape of the Taru Tra range, at this point swings west and flows in that direction for about 20 miles, before finally heading south where the Nam Tamai rushes to join it.

The journey down this limb of the crooked Taron was very pleasant. For the first time since leaving the Mekong, I could walk along star-gazing without fear of seeing stars. The olive river slid smoothly between tall hills clothed with tropic forest, and occasionally broke into a temper of white foam where rocks hindered its swift progress. Behind us the fag end of the Taru Tra range scowled in gloomy grandeur, and dipped down suddenly to the gorge where the river roared at its foot. Graceful tree-ferns ravelled the forest opposite, and splashed out their crimped leaves; an apron of green lace draped the summit of the tall stem, and in the centre a crown of feathery fronds stood up boldly like ostrich plumes. Many strange trees adorned the forest; one with long, black spiral pods took my fancy—a Leguminous species certainly. Amongst the rocks of the river bed were bushes of *Ficus pyriformis*, with erect fruits rather similar in

appearance to the capsules of a Rhododendron at first sight; but the only Rhododendron here (in addition to the epiphyte already described) was a big, wiry form of *Rh. indicum*. This is one of the most widely spread species known, occurring throughout Japan and in most of the southern and maritime provinces of China to at least as far west as the Irrawaddy.

In the afternoon we reached cultivation. Quite a crowd of people were at work in the fields, or beating the grain out of the ear on earthen floors. There appeared to be several villages here, but all we could see from the highway was a hut or two; and a mile further on we turned into the headman's house.

This sportsman met us at the door with a comic *shikoo*. He was mighty fine and proud in a real *lonegyi* and property hat. The hut was nominally divided into four rooms, each with a hearth unto itself; for a hearth means a home. But there was only a single partition, so that I got no privacy, though I had a hearth to myself and kept the home fires burning; and stuffed into the other compartments were an astonishing number of half-naked women and raw babies. The headman himself appeared to be the only adult male on the premises, but there were at least three mothers suckling young—a total of seventeen of all arms.

The Nungs have no objection to bigamy, but it is not likely to be the rule, since the girl's parents have to be wooed with imports such as cattle, knives, and cooking-pots; as not unknown elsewhere, the transaction is conducted on a monetary basis, and the goods must be delivered before the girl is surrendered. The ceremony is largely gastronomic.

During the course of the evening the inevitable Chinaman looked in from a neighbouring hut to see the prodigy who had walked from his country to the Taron. From him I learnt that I was only eleven stages from Hkamti Long; he also said we were going the same road on the morrow, though, as a matter of fact, I never saw him again.

He told me he was a trader from the Salween, and that he came every year to the Taron, selling salt and cloth, and taking back medicines in exchange.

After that we had a jovial evening, the headman producing bamboo stoops, half filled with a glutinous mixture of mountain rice and bird-seed. Warm water was added, and the contents began to sizzle ominously; then a conical bamboo filter was pressed into the festering mass, and the liquor ladled out with a bamboo dipper—like a thimble at the end of a stick. It was heady stuff, tart and prickly to the palate. I saw two men put their heads together and, cheek by jowl, tipple from the same mug, a pledge of indissoluble friendship. We really were in Chang yul—"Beerland," as the Tibetans facetiously call this country.

The Nungs are clever at weaving cane baskets. These are made of split cane (rattan) and woven so finely as to be practically waterproof. Some are made in the form of honey-pots, as much as 2 feet high, with lid to match; but the ordinary basket carried by every man, woman, and child is more like a fisherman's basket without a lid. Another picturesque type of bag is made of string, cunningly netted, with a long, flowing black sporan, made of the combed-out fibres of the leaf bases of the sago-

palm (Caryota). Bags made from the skins of monkey and black bear—the latter as arrow-cases —are also in use.

Drinking is a man's job. No doubt it is worth while to be burdened with an extra wife or two, seeing that women naturally do the field-work, while the men indulge in the more manly occupations of drinking, smoking, and hunting; also talking, especially talking. Like Gratiano, they talk an infinite deal of nothing.

It rained during the night, and November 6 dawned raw and clammy. Three of the headman's eligible daughters elected to accompany me for a day's march, releasing three men who returned to their village. These maids were scantily clad, as Nung maids are; they wore necklaces and ear-rings, and cane waist-rings and knee-rings, and this original, if draughty, costume was finished off with a kilt.

Slanting away from the Taron, we rounded a shoulder of the hill and entered another large valley —that of the Nam Tamai, marching now in a north-westerly direction. Just below us was the Nam Tamai-Taron confluence, and from this point onwards the river, comprising the four streams Taron, Tazu, Dablu, and Tamai, is known as the 'Nmai kha, or eastern branch of the Irrawaddy. About 50 miles south of this junction the Ahkyang River enters the 'Nmai, flowing down from the China frontier; and it was near here that Reginald Farrer, author and plant-hunter, died of diphtheria in 1920. His lonely grave stands on the slope of the hill above the Ahkyang, cared for by the fierce Lisu, at the behest of the *Raj*.

Shortly afterwards we crossed the third river by a dilapidated cane suspension bridge with an ugly list to starboard. This was—or had been—a mule bridge built on exactly the same lines as the cane bridge previously described, but with a footway of split bamboo wide enough for mules to pass. But such bridges have to be replaced every year. The river was the Dablu wang (*wang*, by the way, means "a small river"), which, like the Tazu, flows south from the Tibetan frontier. There was a raft, with two men on it, in the pool below; but whether they were fishing, or merely engaged in aquatic sports, did not transpire.

Immediately afterwards we came down to the Nam Tamai, the fourth and last of the headwater streams of the 'Nmai kha. It is a beautiful river, its rocky banks heavily forested with magnificent trees, climbing plants, and a wealth of flowers.

Pritchard estimated the discharge of the Nam Tamai at two-thirds that of the Taron, so that it is easily second in the quartette; but its current is not as swift as that of the Taron.

All day we marched through the forest, climbing high over spurs and rarely descending to the river. There were tall Englehardtia trees, festooned with hundreds of dry fox-brushes, which swayed in the wind; screw pines, amazingly propped up on stilts, their bayonet leaves sharply bent down in the middle and forming a twisted crown; twining bean plants, with stupendous pods 2 feet long, such as you might brain a man with, while the seeds would form terrible missiles (species of Entada); and the gaudy-coloured orange and scarlet pepos of Cucurbitaceæ, full of poisonous-

smelling and turbid green pulp in which the black lozenge-shaped seeds are embedded.

By the side of the path were the deep violet velvet flowers of Torenia, several species of Impatiens, the blue trumpets of Chirita, and other weeds.

At midday we reached a travellers' bungalow, and halted an hour for lunch. To my surprise, I found that the Nungs ate nothing in the middle of the day. As for me, no sooner had I finished one meal than I began to look forward with pleasure to the next; in city life, on the other hand, I find that people more frequently look back on the last one, not always with satisfaction. The golden mean is no doubt not to have to think about eating at all; but I must confess that I was often very peckish in the course of the march.

We marched all the afternoon, and at dusk reached a village just off the road. Here I put up in a surprisingly good house, 30 or 40 yards long, raised on piles, and divided into five stalls, like horse-boxes, with the passage down one side. It was more like a Kachin than a Nung house. I secured a change of diet here, purchasing four eggs no bigger than pigeon's eggs. Considering that in this country one rooster makes as much noise as a whole farm-yard at home, beginning at 1 a.m. and ending at seven or eight o'clock, it is surprising they haven't more to show for it. Night after night I was awakened at all hours by a rooster crowing into my ear; for they sleep under the low eaves of the thatch, just the other side of the flimsiest sort of partition.

A beautiful leafless Clematis was in flower here. The flowers, borne in panicles, were shaped as in

the English *C. vitalba* ('traveller's joy'), with four recurved sepals, in this case purple, and a stamen in the middle. A very similar, if not identical, winter flowering species I have found near Tengyueh, 200 miles south of the Nam Tamai-Taron junction.

On November 7, six hours' marching brought us to a fine bungalow, where a suspension bridge spans the Nam Tamai; for an officer from Fort Hertz—now only nine short marches distant—usually visits the valley once a year. It was a fine, sunny day, and very hot in the valley, which at this point is between 3,000 and 4,000 feet above sea-level. Flies, too, both tickling and biting varieties, were a nuisance. In the summer the Irrawaddy jungle is a maddening hell of blister-flies, horse-flies, house-flies, sand-flies, ticks, leeches, and all uncharitableness. The bare legs of the Nungs were speckled all over with blood-blister scars, like pin-heads, caused by blood-sucking insects. But at this season it was not unpleasant; though the heat at midday, even in November, was excessive. The nights, however, by contrast, were chilly.

We stayed the night at the big airy bungalow by the bridge, and the headman from a neighbouring village called and brought me a fowl. I could not say anything to him, but I was glad to give him a rupee for the bird.

As we went westwards, the Nungs grew more and more like Kachins—at least outwardly. There was nothing dwarfish about the Nungs of the Nam Tamai; on the contrary, though of small stature, as the inhabitants of the jungle usually are, they were fine, sturdy folk on the whole. A few were

short enough to be called dwarfs, but they were the exception.

On the other hand, their matted mops of hair and their nakedness give them a most uncouth appearance. The men wear big Kachin *dahs* sheathed in split wooden scabbards, open on one side; but, despite this, they are as mild and docile a people as one could meet.

Since Chao's desertion, they had carried my loads day by day, sometimes staying with me two or three days, sometimes only one; but always before they went back there was some one from the next village ready to take their place. Always they brought me to a village, or at least to a hut. Nowhere did I have any difficulty in collecting seven porters. Thus not a day was wasted. Sometimes there was some delay in the morning, while the day's food was being prepared; for the Nungs have no hand-mills, such as the Chinese use, and all grain has to be crushed by hand in a mortar. A hollowed tree-trunk serves the purpose, with a heavy, double-ended wooden butt for pounding, the latter being grasped in the middle with both hands. Needless to say women pound the corn.

My porters brought their day's ration ready cooked, wrapped up in a leaf, which was carried in a cane basket, such as the Nungs invariably carry instead of the universal embroidered bag used by the Kachins, Dulengs, Marus, and others, or the skin bags of the hunting Lisu tribes.

We were now only nine marches from Fort Hertz, and, crossing the Nam Tamai on November 8, we began the ascent of the watershed between the eastern and western branches of the Irrawaddy.

The backbone of the Irrawaddy here does not exceed 8,000 feet in height, rising to peaks 10,000 or 12,000 feet high further north and south. A dense mist hid the tops of the ranges, and, after we had ascended a couple of thousand feet, we came into it. But by this time a faint blueness was appearing as the sun began to rip open the cobwebs, and they were quickly torn down and rolled up into firm clouds, which rested on the mountain tops.

As we wound up through the forest, climbing higher and higher, we had a last glimpse of the great snowy ranges to the north where the Nam Tamai rises. Then we turned a shoulder, and they were lost to view.

TABLE OF ALTITUDES

| Station. | Barometer. | Thermometer. | Altitude (feet). |
|---|---|---|---|
| Atuntzu . . . . . | 21·7 | 55° F. | 10,800 |
| Mekong (at Tzuku) . . . | 25·8 | 74° | 5,914 |
| Si La . . . . . | 19·7 | 41° | 13,484 |
| Salween (at Chiora) . . . | 26·8 | 58° | 4,956 |
| Salween (at Su-chi-tung) . . | 26·6 | 68° | 5,202 |
| Gompa La . . . . . | 20·1 | 43° | 12,944 |
| Taron (at " monkey bridge ") | 26·8 | 49° | 5,011 |
| Taron (at Tingdam wang junction) . . . . . | 26·9 | 59° | 4,848 |
| Taru Tra . . . . . | 21·6 | 42° | 10,977 |
| Tazu wang (Taron junction) . | 28·8 | 60° | 2,759 |
| Nam Tamai (at bridge) . . | 28·6 | 67° | 2,955 |
| Pass between eastern and western systems of the Irrawaddy . . . . . | 25·3 | 60° | 6,882 |
| Mali kha (at Fort Hertz) . . | 30·5 | 70° | 1,134 |

Between Su-chi-tung and Chiora, a distance of 10 miles, the Salween falls 246 feet, or nearly 25 feet, per mile.

Between the "monkey bridge" and the Tingdam wang junction, a distance of about 5 miles, the Taron falls 163 feet, or 32 feet per mile; but if we take the distance from the "monkey bridge" to the Tazu junction, including the great bend of the Taron, the grade works out at nearly 45 feet per mile. After crossing the Taru Tra range, in fact, the river bed drops swiftly.

As the general direction from Tzuku to Fort Hertz lies south-west, it is not possible to compare these heights accurately; but at any rate a general slope to the south-west cannot be denied.

## XIV. IN THE IRRAWADDY JUNGLE

THE difference between native tracks and a methodical road, traced first on a large-scale map and transferred to the terrain, was never more clearly illustrated than in this case. From the bed of the Nam Tamai to the highest point on the road is just 5,000 feet—a strenuous climb on a steep slope. But the grades were easy compared with what we had been accustomed to, and we reached the top (without knowing it) in four hours. To compensate for the gentle rise, the road wound in every direction, especially east; now Fort Hertz lay south-west.

The forest was most imposing. The trees were immense, with massive trunks ending in candelabra of gnarled limbs, and so smothered under vegetation as to render identification very difficult. Easily recognizable species were oak, Pseudotsuga, and Castanopsis. Each was a wild garden unto itself. A mane of lichen fringed every branch, waving like seaweed in a tideway. Bushes of Rhododendron foaming into bloom, creepers, ferns, climbing plants, and orchids—especially orchids—fought and struggled in ruthless dumb determination for light and air. There was no quarter. Nature asks none, gives none. The weak, the wounded, and the dying went equally to the wall

in the fierce competition for a place in the sun; and the result was certainly beautiful.

Two epiphytic Rhododendrons occurred here—the white-flowered *Rh. dendricola*, in bloom, and small bushes of the box-leafed *Rh. sinovaccinioides*; none of the latter had flowered recently.

The variety of orchids, their strange colours and bizarre forms were a perpetual source of wonder. A sweetly scented Pleione frilled every tree-trunk with its purple blooms. Another species, milk-white with a chocolate lip, formed drifts of snow, high up. Many hung down from the branches in festoons, or beaded threads; or lolled in corners; or stood up in stiff haughtiness. But all of them, plain and coloured, proud and humble, had the craftiest, daftest flowers, tuned to the tricks of the insect world.

A colony of belligerent caterpillars created a certain amount of disturbance. They had recently emerged from dormitories, made by weaving together two leaves with a silken web; several such dormitories, crowded with kicking caterpillars, were still intact, but the plants were also speckled with the little black chaps, who resented my mere approach. Their displeasure was so acute that they stood up on their hind legs, so to speak, in protest, lifting their heads with a jerk. The curious thing was that they did it simultaneously, like a company sloping arms; the effect was extraordinarily odd. The leaves seemed to shudder under their efforts, and any faint-hearted bird, seeking a succulent morsel, might well be daunted by such combined action. There were, perhaps, six or eight caterpillars on each leaf. Did I approach, they would

suddenly jerk up their heads at me in unison, and repeat the movement; did I touch the leaf, those on other leaves would join in the agitation; till finally the entire bush, containing maybe half a hundred larvæ, would be twinkling as the outraged inhabitants jerked up their heads and let them fall, repeating the manœuvre while the danger lasted. However, they seemed to grow weary after a little while, till at last they could scarcely lift a leg.

I was interested in the gymnastics of a small caterpillar which I saw suspended from a bush by a silken cord so fine as to be scarcely visible. They were solitary creatures, though from day to day I saw several of them. This larva climbed rapidly up the cord, using the first pair of legs only to wind in with, and ducking its head from side to side as it worked. In this way it wound up the cord, which was held in a ball between the third pair of legs. It was able to let itself down still more rapidly—not by unwinding the tangled ball, but by pulling more thread out of its mouth.

The crest of the range, enveloped in forest, afforded no view, and, indeed, so cunningly contoured was the road, that there was nothing to show we had reached the summit; for a mile or two we kept almost on the level. Then we began to plunge down, down, down, till suddenly a gap, where the side of the mountain had peeled away in a great landslide, gave us a view westwards; and peeping over the crowns of the tree-ferns and screw-pines, we looked right away down into the crowded jungles of Indo-Malaya. Wide watery valleys gaped in every direction, and the curve of the hills showed

full and rounded as a woman's breast under a garment of green plush.

In the middle of the afternoon we reached a tiny bungalow in course of construction for the benefit of travellers by this fascinating road. It had no roof, however. A party of braw Nungs from a neighbouring but totally concealed village came by, and halted to see the exhibit; and two sturdy wenches, carrying bundles of thatching-grass, deposited their burdens and joined the mob. They were not tattooed at all, and the mob chewed *pan*; evidently we were entering the domain of a most prosaic people who did conventional things conventionally. So the Nungs, like their cousins the Marus, and their second cousins the Dulengs, and their third cousins the Kachins, and in fact all the best people, chewed *pan*! The Nungs of the Taron had none of these dissolute habits; they were content with the homely pipe. Indeed, they had to be, for the delicate *Piper betel* does not grow by the icy waters of the Upper Taron, and it would be as difficult to gather lime from those igneous ranges as to gather figs from thistles.

Having ascended the Irrawaddy partition by one rib, and descended by another, we had met with no water all day, though torrents were tittering all round us. Consequently, it was half-past three when I had lunch before this admiring crowd of jungle braves. My porters, by unmistakable signs, suggested a halt here for the night; but the bungalow being roofless, I indicated an advance, confident that, on the down grade, we should soon come to another village.

Herein I was wrong, displaying an ignorance of

"Beerland" only equalled by my optimism, for I had grossly overestimated the number of Nungs to the cubic mile. Having marched for another two hours, up and down (but especially up), and there being no hint of a habitation, we decided to halt before it got too dark to see the path; so we camped then and there, in the forest. I could not be bothered to cook any supper at so late an hour —it was nearly seven o'clock by this time—and dined off *tsamba* and chocolate. Fire-flies danced and glimmered up and down amongst the heavy timber, and after the western sky had changed from gold to an angry smouldering red, night set in peacefully. Nevertheless, I awoke in the small hours to find it drizzling steadily, and my blankets already moist. After a scrappy breakfast, we started down once more and by steep ways came to a wide valley, where we halted for lunch. A stream gurgled musically amongst boulders chromatic with patches of touch-me-not, orange and loud magenta.

We were now in the tropic jungles. Vast smooth trunks shot up for 60 feet, and shivered into a thousand leafy branches. A giant fig, less fortunate or less crafty, carried aloft a weaker brother laced to its back like some old man of the sea, and was bled white without scruple. Cords, cables, and rat-lines hung from above, or entangled the boughs, or corkscrewed up to dizzy heights before sprawling, wearily, over a convenient support. The flowing roots of the great trees stood up out of the ground like thin wavy planks, forming powerful buttresses; and everywhere surged and foamed and boiled the overwhelming vegetation. The very leaves of

Hill Jungle, Western Irrawaddy.

the trees were crusted with humble plants—moss and lichen, and naked hungry parasites.

We marched through cool wet glades, walled by the lofty forest, through avenues of palms and ragged-leafed plantain; paddled through whimpering brooks, from which we lifted the adhesive leech; and presently emerged on to the bank of a river, broad and swift, but happily shallow. There was no sign of a bridge, and I rode across in state on the shoulders of a Nung, who, missing his footing in mid-stream, nearly upset me. On the far bank was a fine bungalow, into which we stepped just as the rain began again. We were saved a severe ducking.

In the river were numerous fish-traps—funnels of bamboo with baskets attached to their lower ends; they were placed in natural sluices through which water and fish were swept together. Two excellent-looking fish were brought to me for inspection and purchase; but as I did not want to cook them, I declined.

There are great numbers of bamboos in these forests, and they exhibit much variety. The Nungs do not make much use of them, except for house-building, cane being more frequently employed; but the Kachins, Shans, Dulengs, Lisu, and others use them extensively for water-butts, drinking vessels, flumes, ladles, flooring, walls, and so on—the bamboo being, of course, split and woven into mats for the floors and walls of huts.

Some of the most striking species I noticed were the following:—

A gigantic species, with stems 100 feet high and 20 inches in girth near the base. These grew in

great clumps, forming forests by themselves at an altitude of 3,000 or 4,000 feet. We marched beneath them.

A very broad-leafed, thin-stemmed species forming dense leafy thickets at higher altitudes, round about 5,000 to 6,000 feet. This plant grew only 15 or 20 feet high, but the thickets were impenetrable.

At lower altitudes by the Taron were clumps of grass-like species, also with broad leaves, but with long hairs fringing the leaf bases.

Another forest-forming species had rings of downwardly projecting spikes at each node—a nasty thing to catch hold of in a hurry, for the prickles were as hard as iron.

A fifth, perhaps the most beautiful of all, had deep olive-green stems like polished glass, with a white ring round each node, and the leaf base chocolate, at least while young. It also formed clumps 20 to 30 feet high.

A sixth very large species was conspicuous for its bright orange leaf bases ; and there were others.

There were also gamboge trees (Garcinia sp.), to which my attention was drawn by the bright yellow latex, exuding from incisions made by the natives.

One of the commonest trees hereabouts was a species of Illicium, whose wheel-like fruits, loosely containing the hard-polished coffee-coloured seeds, strewed the ground. In the hill jungle the trees seem often to grow in colonies—here a group of oaks, there of Chestnut, or Illicium, or Ficus.

On November 10 we began climbing again. Up we went through the jungle into the temperate rain forest, 3,000 or 4,000 feet higher, where oaks

and Rhododendrons took the place of palms and fig trees.

The epiphytic *Rhododendron dendricola* was abundant here, high up in the trees. Looking down on the forest from above, one saw many of them, like surf against the gusty green. On the clayey banks were seedling Rhododendrons with hairy leaves. I searched far and wide in the hope of discovering adult forms of this, only to find at last that it was the immature form of *Rh. dendricola* itself. In the adult form, the leaves are hairless, though the under-leaf surface is densely lepidote, after the usual manner of the 'Maddeni' Rhododendrons.

I had now found four species of this alliance, viz. *Rhs. sino-Nuttalli, ciliicalyx, crassum,* and *dendricola,* in the Irrawaddy jungle; previously I had found *Rh. megacalyx* in the Htawgaw Hills, above the 'Nmai kha. To these five may be added *Rhs. Cuffeanum* and *burmanicum,* both discovered by Lady Wheeler Cuffe; and *Rhs. carneum, Cubittii,* and *Veitchianum,* all from other parts of Burma.

Of the remaining thirty described species, eight come from Siam or Assam; so that there can be no doubt that this group centres in the Indo-Malayan forest region. The fact that twelve species extend into Western Yunnan (two of them, *Rhs. crassum* and *ciliicalyx,* being as much Burmese as Chinese) only tends to prove that the flora of Western Yunnan as far east as the Mekong is fundamentally Indo-Malayan. Further east, outliers occur in Szechwan and Kweichow, while nine species range westwards into Sikkim and Bhutan. But the headquarters of the group is clearly Burma-Assam.

The 'Maddeni' Rhododendrons include some

of the most delightful species of all. The flowers are invariably large, usually pure white or white flushed with rose, trumpet-shaped, and fragrant; they are borne in a loose truss amongst the beautifully bronzed leaves. Unfortunately, few of them, if any, are quite hardy in this country, except, perhaps, in a few favoured localities where it is unusually warm and moist. They are plants for the cool greenhouse. Nevertheless, several of them are the parents of sturdy hybrid children; e.g. *Rh. præcox*, which has *Rh. ciliatum* for one of its parents.

Another species of Rhododendron I saw here was a 'Stamineum'—probably *Rh. Mackenzianum*, which is the commonest low-level tree Rhododendron in these forests. (It must be remembered our altitude above sea-level was now between 5,000 and 7,000 feet.) This *Rh. Mackenzianum* grows 40 or 50 feet high, and was particularly prominent because its tawny-chestnut bole was always clean and smooth, whereas the trunks of the other trees were completely smothered under moss and other vegetation.

A third species occurred at an altitude of nearly 7,000 feet, on the summit of the ridge. It was little more than a stout bush 12 feet high in this exposed situation, but under more favourable conditions it develops, I believe, into a small tree. The trusses are rather large and compact, with twelve to eighteen flowers each, and the capsules are short and dumpy. It is probably one of the 'Irroratum' series (K.W. 5533).

Then, when it seemed we were going to reach the elfin wood away up in the mist, we passed the summit and began to descend again. Below lay

the broad valley of the Nam Tisang, an important tributary of the Western Irrawaddy. But as each river valley we crossed lay at a lower altitude than the last, so each dividing range was crossed at a lower altitude. This pass was just under 7,000 feet above sea-level.

We had not proceeded far down the western flank of the range when we came to cultivation, and presently to the bungalow, which marked the end of our stage; for not knowing anything about the route, and being dumb so far as gathering information was concerned, it seemed advisable to keep to the regular stages. My one effort at speeding up had ended unfortunately.

There were several huts concealed not far away, and I changed half my porters here—or rather they changed themselves. The headman brought me a bamboo tube filled with a sticky mass of fermenting rice. The flavour is musty, with the 'tang' of soda-water; but I ate it joyfully, and felt more cheerful.

And so, climbing again next day, but to no great altitude, and crossing a dozen bubbling becks (whereby my overworked boots finally came to grief; for, as usual, I loitered behind, and had to paddle), we came at length to the flat valley of the Nam Tisang.

Oh, but the smell of the Malayan jungle as it rose richly to my nostrils! The perfume of flowers in the boscage, mingled with the sour odour of decay, and the shapeless musty patches, where some creature had crossed the path, breathing infection! And the queer cries and noises, the sudden fearful silences, the long hush in the misty dawn, before

the valley rang with the hoot of the hoolock monkey!

The cry of the hoolock, the white-faced gibbon, as it greets the dawn, is the most joyous cry in the world. When the sun slants over the ridge, splitting the forest with golden wedges, and the hills begin to harden out of the nebulous vapour, the jungle gives tongue. "*Wa*-hu! *Wa*-hu! *Wa*-hu!" cry the gibbons in chorus; the yelps quick and short, like the yapping of a puppy, the second note almost lost. And then comes the answer, "Hu-wa-a-a!" in a long-drawn wail, and—silence. Suddenly the chorus breaks out again wildly, and the glad shout is taken up by more and more of the troop, till cutting crisply through the babel comes a clear, shrill whistle, repeated at intervals; and once more abrupt silence. And presently the cry is heard more faintly, far away in the jungle.

Perhaps during a lull you may hear a movement in the tree-tops, and see the branches shaking, and hear a splash of foliage; but rarely do you catch sight of the gibbon, for he is a shy creature, being much persecuted by the hunter for his skin, and no doubt for food also. It is the exception to hear him cry after noon; at dawn, when the shredded mist hangs over the valleys, he yelps with joy, and so goes away and hides himself in the jungle.

During the heat of the day, insects and birds keep up a monotonous vamp. The whirr of the scizzor-grinders is heard everywhere, and the whistle and steady chirp, chirp of crickets. A sudden clamour of birds, quarrelling under the bamboos breaks through the stifling peace, and then the maddening twonk, twonk, twonk of the copper-

smith bird, or barbette, repeating itself on one note for as long as you care to listen.

As the sun gains in power, silence gradually steals over the jungle; the drone, and clack, and tick of insect life ceases, and even the birds are dumb. Then it is that the jungle begins to whisper to itself, and swift noises stab through the afternoon rest, loud and clear, leaving the silences between more tense. A fruit drops to the ground with stunning violence. A leaf snaps loudly, and comes crackling down through the branches. Bamboos, rubbing against each other, grunt and squeak dismally, and even the stiff palm-leaves twitch noiselessly in a stray eddy. In the hill jungle you are always within earshot of tumbling water, and the splash of the torrent as it drops from pool to pool is as refreshing as it is musical.

At night is heard the minatory bark of the muntjac, and perhaps the scream of an animal in deadly terror, which dies away in horrible gurglings, or ceases abruptly.

Tramping through tall *kaing* grass, amongst which grew a purple-flowered bamboo orchid (*Arundina bambusiæfolia*), we emerged suddenly on to the bank of a wide, shallow river—the Nam Tisang; and there in a clearing stood a real village, six or eight huts at least, with fences, and cattle, and girls drawing water from the river. We had not seen a village, not anything you could honestly call a village, for a month. I went to the excellent rest-house for travellers—a snug bamboo-mat hut, and the village turned out in force to look at me. The headman, disguised as a Burman, came along at a half-trot, fastening up his clean *in-gyi* and *gaung-*

*baung* as he ran to be in time. Naturally he was not expecting distinguished visitors, as I had omitted to inform him I was coming! He shikoed prettily, and I said, "How do you do?" in Burmese (thinking he was, indeed, a Burman). To my joy I found he understood me; and though I lack the gift of tongues, I was able to converse with a fellow-human at last.

I learnt that I had arrived at the village of Nok-mung; that the inhabitants were Nungs, and not Burmans or Kachins; and that I was only five marches from Fort Hertz. That was good. But now I had a brain-wave. Since leaving the Nam Tamai, I had been carrying about with me a plump chicken, waiting for an opportunity to cook and eat it, but feeling incompetent to do it myself—that is, to pluck and cook it, though fully competent to eat it. The opportunity had now arrived. I handed it over to the headman, and told him to carry on; and he gave it to one of his happy band, and issued the necessary instructions and condiments.

But that was only one of many miracles performed by these resourceful Nok-mungs. They brought me hot water to wash in; and after that I really had to wash! They made my bed—not a very exclusive miracle that, because they had only to untie the bedding and roll the blankets out on the floor. (I had done it myself every night.) They even devised a table and a chair, and laid the table. Altogether they made me quite comfortable, and then set before me a meal of curried chicken such as I had sometimes dreamed of, but had not encountered for half a year. There is a

warm corner in my heart for Nok-mung and its headman.

The Nam Tisang collects water from a network of rivers to the north and empties itself into the Mali kha 30 miles south-west of Fort Hertz, in an unexplored region of the valley. It is one of the biggest tributaries of the western branch of the Irrawaddy; yet so shallow was it now, that several Shans waded across, the water reaching no higher than their waists.

## XV. THE 'GREAT LAND OF GOLD'

NOK-MUNG is a Shan name, meaning 'outside the city.' It was at this point that the Shan leaders, long ago, after driving the Tibetans from the plain, posted a piquet. But all that was in the brave days of old, when Hkamti Long stood for something, and the warlike Shans stood between the advancing Tibetans and Burma.

The Nung huts resemble small Shan huts, with domed porch; and the present inhabitants, who are fine upstanding men, dressed in *lone-gyi* and jacket, bear little resemblance to their relations of the Nam Tamai or the Taron.

It rained again during the night, and the morning of November 12 was damp and misty; but the mist quickly precipitated itself, and the outline of the mountains softly took form. In the vivid light the broad river, singing in its curved valley, looked very beautiful.

We crossed in a dug-out, rather late, for I had to change half my porters here, and as there was no village for the next three days, the relay had to prepare a sufficient supply of food for the journey. However, the stage was an absurdly short one, only 8 miles along the level, to a hut at the foot of the next ridge. Gorgeous swallow-tail butterflies pranced through the open glades; but those which skulk in

the depths of the forest, though the least conspicuous, are the most interesting. Their flight is weak. They fly low, and for short distances only, but with a curious zigzag or dancing motion. They are found in the hill jungle, where the ground is drier, and come out, I believe, mostly in the dry winter months. At that season the sun is lower, and its rays filter into the forest, striping and dappling the slopes with light and shadow; and here it is that the barred and ocellate butterflies hover amongst the dead leaves. On the wing they are conspicuous enough, but no sooner do they settle than they instantly disappear. Their wings are barred with shadows (Melanitis) or edged with rows of pale eyes, resembling the millions of eyes cast on the ground by the sunlight drifting through the foliage. So these dazzle-painted butterflies, as soon as they settle amongst the dead leaves, wings folded, harmonize with their surroundings and melt quietly into the indistinguishable background. They do not resemble something else. If they did they would be visible. They just disappear.

It is almost impossible to recognize the trees themselves, especially in the winter; recourse must be had to indirect methods. In the hills, an open ridge sometimes enables one to look down on the forest, whence, with the aid of field-glasses, some may be recognized by their foliage, habit, or flowers. Similarly the river valleys enable one to see tree-ferns, screw-pines (Pandanus), palms, and other striking types of vegetation. Birds, monkeys, even insects, may furnish valuable clues, but this requires esoteric knowledge. I have no doubt that the distribution of the gibbon is dependent on a certain

food-supply—probably a species of Ficus. Other species of Ficus are betrayed by birds. Notched trunks from which latex has flowed are useful; it was thus I noted the presence of Garcinia and of wild rubber. Better still are fallen trees, which bring down with themselves orchids and lianas, otherwise inaccessible. But fallen trees are not common, and, when stricken, are usually supported by a tangle of ropes, which does not permit them to fall. Flowers may sometimes be picked up, and fallen branches bearing flowers and fruit are invaluable. The habit many tropical trees have of bearing flowers on the old wood—even low down on the trunk—is likewise of great assistance to the harassed collector. But by far the most useful and generally available key to the problem is furnished by the immense numbers of fruits which strew the ground inside the forest. From inspection of these one can at least be sure of the genus, and often of the species too.

The path through the jungle was carpeted with myriads of these fruits and seeds, which germinated immediately, or provided food for army corps of grubs, worms, and beetles. The slaughter is colossal, and the mortality is entirely amongst the offspring. Thousands die that one may survive; these are Nature's terms.

Amongst the most noticeable were the broad, thin pods of a Bauhinia, the wheel-shaped schizocarps of an Illicium, numerous nutmegs (Myristica), cones of Michelia, at least six kinds of acorn, the prickly Castanopsis, which is just like a Spanish chestnut, the winged fruits of Securidaca (the wing resembles a propeller blade), and the nuts of

KACHIN GIRL, VALLEY OF THE MALI-KHA.

KACHIN GRAVE, WESTERN IRRAWADDY.

various Dipterocarps, with their long plume-like streamers.

Elsewhere the flattened, one-seeded, winged pod of a Derris and the fruit of a Sloanea were seen, and, most remarkable of all, the cast-iron fruits of a Parinarium—the fleshless plum of Indo-Malaya.

The thin, curved, plate-like embryo is embedded in a half-inch shell of the toughest wood imaginable. It is like iron. The stone—for the fruit has a thin fleshy jacket—is 2 inches long and 1 inch in diameter, with rounded ends like a sausage. A heavy blow with a hammer just cracked, but did not break, one of these queer plum-stones.

The method of dispersal—for the genus, though not previously recorded from Upper Burma, is well distributed—is not known. The only method one can suggest is that it rolls down the steep hill-sides. "Ah!" you say cleverly, "but how did it get *up* the hills?"

If the method of dispersal is an unsolved problem, the mode of germination seems an insoluble one. How the embryo ever gets out of that half-inch armour-plate is a mystery.

Besides all these, there were a multitude of figs—hairy figs, smooth figs, hard figs, soft figs, figs large and small, prickly and rough.

November 13. Minimum 62° F. Only one more climb, up out of the valley of the Nam Tisang. There was a beautiful, dark chocolate-brown, glossy-flowered Cypripedium just opening on the bank, and maple and Englehardtia trees overhead. Up and still up, through the rustling bamboo forest, to the cold granite ridge, raked by stinging rain. Here we met once more with homely oak trees,

and the queerest little fruiting bush, of which it is necessary to say more.

It was perched on an old tree-stump, on the very apex of the granite ridge, but closely invested by large bushes and small trees of oak, Euonymus, Magnolia, maple, *Rhododendron Mackenzianum*, screw-pine (Pandanus), and so forth. I saw it on the high bank above my head as I passed—a compact 15-inch bush with slightly ascending branches, hung all over with bunches of slender scarlet pods.

"Anyhow, it is not a Rhododendron," said I to myself, and passed on to a spot where I could climb the bank. There was a straight cliff on the other side, and I looked down on the tree-tops. I poked about amongst the bushes on the ridge; came back to the fruiting bush; looked at it curiously. Next moment I was on my knees beside it, trembling.

"Good heavens! it *is* a Rhododendron!" I whispered shakily, as with numbed fingers I began pulling off the dangling red capsules. Mist and rain swept gustily over the ridge, but I heeded it not till I had stripped that bush—there was only one.

The capsules were in loose trusses of two, three, or rarely four, each about an inch long and the thickness of a knitting-needle, and, as already remarked, almost scarlet in colour. In fact, they resembled nothing so much as the slender, finger-like capsules of Æschynanthus—if one can imagine the capsule of that plant adopting the fiery colour of its flower. The effect of scores of these flushed capsules hung all over the little dark-leafed bushlet was extraordinary.

If the capsule of this species is odd, the seeds are unique. Instead of being winged in the ordinary

way, each seed is provided at either end with several thread-like silken tails of a bright golden yellow, and as fine as spider's web.

The small, leathery, obovate leaves are dark polished green above, paler below, and dotted with glands; the long, slender capsule (not, however, so long, nor so slender, as those of *Rh. Mackenzianum* and its allies), and the peculiar tailed seeds, are characteristic of only one alliance—that of the Sikkim *Rh. vaccinioides*. The only other known species of the alliance is *Rh. sinovaccinioides* (an unfortunate name, since it is not a Chinese plant), from the Taron. I had collected specimens of the latter, without fruit or flowers, which were apparently scarce, though the plant was fairly common on rocks and trees. But the species I had now found, laden with fruit—its seed is numbered K.W. 5545—was, I think, quite a different plant.

The 'Irroratum' Rhododendron already referred to (K.W. 5533) also grew on this ridge as a large shrub, and I added more seed. The ridge, which is composed of granite, is only just 6,000 feet above sea-level; but being quite open (and the highest in the neighbourhood), supports a conflicting flora on its exposed and sheltered flanks, and its still more weather-beaten crest. The orchid-laden trees, bamboos, screw-pines, Rhododendrons, and a myrtle in full bloom, formed a curious mixture. The trunks of the oaks especially were smothered with the milk-white blooms of a Cœlogyne, the orange spikes of a Dendrobium, and other orchids; for be it noted, since crossing the backbone of the Irrawaddy, we had met with far more flowers than in the gorge of the Taron, and many trees were breaking into

blossom. One other Rhododendron I will refer to here—a large tree, 50 or 60 feet high, possibly a 'Stamineum' allied to *Rh. Mackenzianum*. Though fairly abundant in this temperate rain forest, I never saw a fruiting specimen, and am not absolutely certain that it is a Rhododendron at all; my diagnosis depends upon the recognition of bark and foliage. From a fallen specimen of no small size I collected shoots, but there was, as usual, no fruit. Perhaps the next man who follows me will have better luck—he is welcome to my information, at any rate.

As this is practically the last Rhododendron to which I shall have occasion to refer, let me add a few words about Rhododendrons in Burma generally. The number of species recorded from the province is now about seventy-five, of which the great majority have been found north of the Irrawaddy confluence within the last decade.

In the course of my first journey to the Htawgaw Hills, on the eastern branch of the Irrawaddy, in 1914, I discovered about a dozen new species. I therefore returned to the same region in 1919, and added others, collecting seed of some thirty species, which I brought to England. By this time nearly all the plant collectors in Asia had heard how rich was the flora of the North-East Frontier, and they came buzzing round the Htawgaw Hills like flies after jam. Everybody found new species, and the result was that the tally of Burmese Rhododendrons was quickly doubled.

In 1922 I made the reconnaissance here described, nearer the sources of the Irrawaddy, adding new species and extending the limits of old ones; but

perhaps the most interesting observation made was that the Rhododendrons of the north are quite different to those of the Htawgaw Hills, growing more and more Himalayan and less and less Chinese in their characteristics.

Of the seventy-five Burmese Rhododendrons—these figures are not precise, of course—about twenty belong to the series 'Neriiflorum,' found chiefly in the sub-alpine region; a dozen, belonging to the series 'Irroratum,' are trees of the temperate rain forest; while ten belong to the series 'Maddeni,' which are mostly shrubs of the sub-tropical rain forest.

Thus of the seventy-five species, more than half are included in three series. The remainder are scattered through a number of series, including 'Barbatum,' 'Campylocarpum,' 'Campylogynum,' 'Falconeri,' 'Fortunei,' 'Grande,' 'Thomsoni,' 'Trichocladum,' 'Triflorum,' 'Stamineum,' 'Heliolepis,' 'Saluenense,' 'Vaccinioides,' and a few others.

But no final pronouncement can be made on the Burmese Rhododendrons for a long time. This vast region of mountain and forest has hardly yet been touched, really. Hundreds of species await discovery in those dim misty jungles—this I say confidently, having some small knowledge of the country. But the Irrawaddy jungle is not Western China; it is a very different proposition, and it will take time to explore it.

To resume the narrative. From the 6,000-foot ridge we descended, gradually passing through dense forest, and presently reached a bungalow, where we halted for the night. Almost immediately heavy rain set in, so that we could see nothing of the plains.

November 14. The night was wet and chilly, and it was raining heavily when we got up. We changed five of the seven porters here, though whence sprang the new-comers I had no idea ; after some delay, we started down at 10 a.m.

Amongst the forest trees here were various species of Garcinia, easily recognized by their milk-white or bright yellow latex, which exudes from the trunk, and from the outer shell of the fruit. This is the gamboge of commerce, formerly used for dyeing the monks' robes. Beneath one tree I picked up some cadmium yellow fruit, and, being both thirsty and curious, ate some. Each was about the size of a fig—a fig of Smyrna—and had a soft outer skin, quite unlike the thick corky shell of the mangosteen (*G. Mangostana*).

Although the fruit was tart, it was, nevertheless, quite good, and no bad effects followed from eating two. Indeed, the sub-acid flavour was pleasant and thirst-quenching, so that I marvelled no one had thought of cultivating them in Burma or India.

The seeds are embedded in a homogeneous rather stringy flesh, which is not aggregated into 'figs' as in the ordinary mangosteen.

Nothing was visible below but a lake of gently heaving cloud, moist and shapeless. And so we went on down through the flower-decked forest to the flowerless jungle in the ragged bed of the Nam Ti, reached on November 14.

There were numbers of a large, gaudy, day-flying moth (Disphania) here. It is generally seen in the neighbourhood of water, dipping to drink on the wing, and flying rather high. Though its wings move rapidly, its flight is, nevertheless, weak.

November 15. Minimum 61° F. As the morning mist dispersed, there was a slight fall of rain—just enough to keep the vegetation fresh ; but the gibbons yelped in derision till the sun drove off the mist, and the forest was striped and dappled with light and shade. In the rocks in the stream bed grew masses of a curious but beautiful Begonia, with snow-white flowers, and very regular, lanceolate leaves. In the forest a large species, 2 to 3 feet high, was also in flower, the flowers in this case being blush-pink, the capsule clothed with crimson hairs, and the stems and leaves hoary. The march was an easy one, the path ascending gradually, till at last we came out on to a narrow platform. Below us the last spurs flared away westwards, and at our feet lay the honey-coloured plain, with the Assam ranges dimly outlined beyond ; an arc of silver where a loop caught the sun proclaimed the Western Irrawaddy. We raced down the slanting rock rib and so out on to the level plain of Hkamti—'great land of gold.' Crossing the paddy-land, which is diversified with strips of bog and dense scrub, we came to the village of Kang-kiu, on the bank of the placid Mali kha, the Western Irrawaddy itself.

A soft peace enfolds the world. Doves coo in the jack-fruit trees about the village ; mina birds chuckle to one another in the roofs ; and the silvery tinkle of bells from the monastery, whose thatched spire peeps up from the palm-grove, mingles with the lowing of cattle. A calm-faced monk in yellow robe beats a spinning gong, and the high throbbing note calls the neatly dressed Shan women to evening prayer. And when the sun has dipped down behind the purple ranges, bats flit to and

fro in the shadows, wheeling through the hut and out again with sure skill.

By whichever route you approach Hkamti, whether from Tibet in the north, from Burma, from Assam, or from the east, you experience the same curious sensation of freedom, of emerging from night into day, from prison into the open. Shut up in the vast dim forest for many days, where the rafters of the roof of the world sag down to the plains, crossing innumerable vexed rivers, climbing up and up over the close-knit ranges, with always more ranges, divided by yet deeper troughs ahead, you feel, indeed, a prisoner, fast in the pleated web. Thus up and down you toil, and up again; and ever the last summit mocks you, retreating into misty distance. It is a labour of Hercules to cross the Irrawaddy jungles.

And release comes suddenly. One day more, and there at your feet is the watered, sheltered plain, mellow with the fields and the homes of men. In one swift, pregnant hour you run down, down, through the last of the hill jungle, and step out into the golden haze of sunset—a free man. You tread lightly on the level sward. Your heart stops racing, and breath comes easily.

Yet throughout the journey from the Mekong to the Irrawaddy we had been loping steadily downwards on a long slant. Every great river we crossed was lower than the last; every watershed we climbed was less lofty. Taking the country as a whole, we were descending a vast incline of the earth's crust—a corrugated and rumpled crust, truly but, nevertheless, inclined; as, indeed, the vegetation conclusively proved. Thus taking first the chief

rivers in order from east to west, in round numbers. The Mekong at our starting-point flowed at an altitude of nearly 6,000 feet. The Salween where we crossed it was 700 and odd feet lower, or 5,200 feet. The Upper Taron at the "monkey bridge" was 200 feet lower than that, or 5,000 feet; the Nam Tamai, at the bridge, 2,000 feet lower again, or 3,000 feet; and the Mali kha, on the Hkamti Plain, only 1,100 feet above sea-level. And similarly with the passes.

November 16. Minimum temperature 58° F. A thin mist veiled the river, but the sun quickly rolled it up and tidied it into neat clouds. On the previous evening I had accosted the headman of Kangkiu, and told him to send a man with a note to the Deputy Commissioner at Fort Hertz first thing in the morning, announcing my arrival. He had gone off at sunrise, I was told.

At nine o'clock we started on our last walk—15 miles—past the monastery, with the bearded sago-palms and jack-fruit trees in the clean-swept compound; past the little market gardens, where the women were already at work, and so to the bank of the river. But what a change! Instead of the bucking waters to which we had been accustomed, instead of raw cliff, wearing through patches of forest which clung like moulting fur, and the boulders flogged smooth by the slam of the spate—a broad expanse of sleepy water, in which the trees were mirrored, flowed placidly between strips of silver sand. And behind was the everlasting jungle.

The shallow water slid along with unruffled surface. Even where, further on, a ledge of rock jutted out, there was no noise; the river slunk idly by. Framed between tresses of foliage you saw the broad

sweep of water, backed by the wall of cool green jungle. The air was filled with the ticking of insects, and the morning sun smote on the glossy foliage till it shone like clouded jade.

Presently we emerged into a clearing, where stood a chalk-white pagoda, its champagne-bottle spire crowned by a golden *hti*. At first sight it looked almost like any other Burmese pagoda, such as you meet with far away over the southern hills, beyond the confluence. But the shape was certainly a little unusual. Closer examination revealed the oddest figures flanking the four sides of the plinth, a pair on each side. On three sides the usual *chinthe*, such as guards the entrance to every pagoda in Burma, was accompanied by a human figure. On one side only—that which faces south towards Burma—are both figures human, representing a pair of *mintha*. Facing the river is the figure of a man, seated, one eye shaded by his hand as he gazes out across the river, watching for the advent of the Lord Buddha mounted on a royal elephant. Another human figure is that of a *minthamee*, and the third is perhaps the Buddha himself, though in an unconventional attitude.

And so marching over the hot sand, through belts of tanglewood, we came to where the Nam Palak pours its water smoothly into the Mali kha. At this point the latter river bursts out of the northern ranges, flowing round the base of an isolated hill called Noi Chenam, which, translated, means ' the hill which was submerged.' It rises a thousand feet above the plain, but its name certainly suggests a flood, the tradition of which has survived. It may be added that the plain has all

the appearance of an ancient lake bottom, though none of the present inhabitants know of any such tradition, beyond the bare name.

The Nam Palak is one of many small rivers which, flowing down from the Assam ranges, water the plain. We crossed the Mali by a temporary bamboo trestle bridge—this, of course, would be swept away in the rains—and went along by the Nam Palak, mile after mile through the scented jungle. My porters halted for a swim in the warm mahogany-coloured water. At last we came to a ford, and I crossed in a dug-out, and here I met my messenger returning. He had delivered the note, he said, and the *thakin* was sending me a pony. This was good news, for I was by this time tired of walking, and it was very hot. The last day always is tiring.

However, I plodded on, greedily thinking of the tea which kind friends would have waiting for me. There would be a snow-white tea-cloth. . . .

On the other side of the river was a Shan village, and beyond that acres of golden brown paddy, which neat Shan girls were reaping. I created quite a sensation here, but was scarcely surprised. It is unusual for bearded sahibs, waving butterfly-nets, and followed by a file of porters, to march into Fort Hertz—especially from the direction of China.

We were now quite close to Fort Hertz, which, but for a screen of bamboo, and the hedges of Citron, Lantana, and other shrubs, would have been visible. Another two miles brought us to Putao village itself, and the main road. Still no pony, and I began to wonder if the messenger had taken my note after all.

Only two more miles! Very soon the first strag-

gling huts of the village began to appear. But was this, indeed, Hkamti Long, the 'last place in Burma,' to which I had wandered out of the jungle in 1914, immediately after it had been taken over by the Indian Government? Scarcely did I recognize it! The restless energy of the English had transformed it—yea, they had made bricks without straw. I walked down the broad gravel road as in a dream, past the vernacular school, past the neat Burmese huts with their little fenced gardens, past the busy Chinese shops, and through the Shan village. I could hardly believe my eyes as I saw the stout timber bridges over the sundered streams (we had paddled less than a decade ago), and the cart-road up to the ridge where the fort stands. Chinamen, Shans, Kachins, and other loitering people stood and stared at me, and certainly I must have presented something of a puzzle to their eyes, though I still marched in quite good form. And then I met an Indian clerk, who said good evening to me. I returned his greeting, and asked to be directed to the bungalow of the Deputy Commissioner.

"Where are you from, please?" he asked presently, politely trying to take me all in without palpably quizzing, from my butterfly-net and stove-in hat to my muddied trousers and decadent boots.

"From China," I said—and added, "over there!" as he seemed a little puzzled in which direction China lay.

He goggled ominously, and, recovering, began to tell me discursively the harrowing story of a man who once walked round the world. But I cut him short and went my way, breasting the hill. And quite suddenly I came to Fort Hertz, crowning the

KACHIN HUTS WITH WOMEN WEAVING.

level ridge—the military police lines on the promontory which looks out northwards over the wide plain to the frowning frontier of Tibet, and the civil lines behind. Here I lost myself and went wide. It appeared that the Deputy Commissioner was out on tour; but I wandered past pretty bungalows, and the white hospital, and the post office, and court-house, and came at last to the bungalows of the police officers. And then striding across the compound came an Englishman. It was Captain Robinson, of the Military Police. I began to explain myself, but he short-circuited me, saying that I was expected—they had got my note after all, and sent a pony out to meet me, but it had gone by another road. Next minute I was shaking hands with Major Gatherer, the Battalion Commandant, whom, curiously enough, I had met in Bhamo the previous February, just as I was leaving for China.

Gatherer, with characteristic hospitality, immediately made himself responsible for me. I was to put up at the dâk bungalow, and have all my meals with him. He ordered tea—it was after four, and they had had theirs—and while we waited he told me the news. The crisis with Turkey (I seem destined to hear of wars and rumours of wars in Fort Hertz; it is for ever associated in my mind with strife), and the General Election.

Presently came the Kachin boy to announce tea, and as I had had nothing to eat since early breakfast, I did justice to it, while I talked to Gatherer and Robinson. And there was a snow-white tea-cloth, just as I had pictured it, and flowers in a vase. And in the middle of tea Captain Leeming, another Military Police officer, came in.

Robinson did not belong to Fort Hertz really. He was Civil Magistrate and Post Commandant combined at Kawng-lu, which is four days' journey up the hill on the road to the 'Nmai kha ; but when the cares of Empire weighed too heavily on his shoulders he drifted down to Fort Hertz for a game of bridge and a drink. The change did him good.

After tea Gatherer took me across to the bungalow, and sent an orderly to look after me—for I was still without a servant, of course—and having paid off the last relay of Nung porters, I settled down for a wash and brush-up, with relaxation at Fort Hertz.

After a welcome bath, shave, and change of clothing, I went across to Gatherer's, and presently Robinson and Leeming joined us. We had dinner, and then, of course, played bridge. It was the most uproarious night I had spent for three-quarters of a year.

Hkamti Long has a bad reputation amongst men in Burma, who have never been there and don't want to go. They pale at the thought of being sent there—it is like being sent to the Andamans. In truth, they are scared of a bogey created by themselves, for it is not half a bad place—certainly no worse, and probably much better, than many a health resort in the Delta.

Normally there are three white men at Fort Hertz, and one at Kawng-lu. But they are rarely at home together. Fishing is the chief attraction, and those who indulge in this pastime are never dull or sorry. Gatherer was an expert and keen fisherman, and Leeming also fished ; consequently they both loved Fort Hertz. But Robinson loved it too. He did not fish. He had never been known

to shoot anything, unless it was sitting still, looking the other way. He did not even collect bugs. But he loved the jungle passionately, for its own sake, and he liked the people, and obviously was respected by them.

And so came to an end the day of my arrival at Fort Hertz.

## XVI. THE LAST JOURNEY

ON November 29 I started northwards on a trip to the sources of the Mali kha, about a week's journey hence. My old friend Barnard, the Deputy Commissioner, had returned the day after I got in, only to depart a few days later to meet the Commissioner, who was expected in December; and Gatherer had also gone south to meet the Deputy Inspector-General of Police. Robinson had returned to meditate on his hill-top, and only Leeming and I were left behind.

Barnard had wired to the local government to obtain permission for me to cross over into Assam, and his district being as quiet as a church, and far safer than Piccadilly, he had kindly given me permission to wander anywhere I liked within his jurisdiction.

The western branch of the Irrawaddy is known to the Kachins as the Mali kha, and to the Shans as the Nam Kiu, which means 'four rivers'; and just north of the Hkamti plain it begins to break up into the four rivers.

Our first march was to a Shan village called Pang-kai. The road was a good one, and the country, though flat, extremely picturesque. Open pastures, striped here and there with jungle, alternate with wide areas of scrub; but this is easily penetrated, for the mooning buffalo drive paths in every

KACHIN BAMBOO RAFT ON THE MALI-KHA.

direction. Everything here is smothered in wraps of climbing fern.

We passed crumbling pagodas, forgotten in the forest, and paddled across the river; and early in the afternoon we came to our village. On the following morning we started, while the mist yet lay like pale smoke over the lowlands. Almost immediately we entered the jungle. Water dripped like rain from the trees, and it was curious to notice the perfectly inert butterflies, rigid with cold, waiting for the sunshine. They stood, wings clasped woodenly, on the streaming leaves, and, when touched, flopped feebly to the ground, as though paralysed. Not till ten o'clock did the sun begin to stab through the mist, and release them from their torpor. At this season, indeed, they have only a few hours in the middle of the day in which to sport; for they never come out till the mist is dispersed, and before the sun is down behind the ranges they retire. Nevertheless, up to the first week in December there were many varieties on the plain, and to the moist sandy banks of the Nam Palak they came to drink in hundreds.

There were few flowers left—more in the foothills than on the plain. Here I came across a curious little orchid, with drooping spikes of snuff-coloured flowers; but the carrion smell was distasteful. About midday we reached the village of Mansekun, which, with a few satellite villages, constitutes the state of the same name, with its own *sawbwa*.

My party comprised six Nung porters and a Shan, besides a uniformed Kachin *pyada*, to control them and to engage more porters at the last village on

the plain. The Shan, though much the biggest man, carried the lightest load; for were not the Nungs slaves to his race—released slaves certainly, but yoked to the dominant power? He would have scorned to carry a heavier. But for all that the men were very cheerful, singing and laughing as we tramped through the forest.

The afternoon was fiercely hot. We were crossing an almost limitless sandy, or rather gravelly plain, covered with high grass which had been scorched and shrivelled by the sun. The pleasant jungle overflowed from the foothills, and lapped the edge of the plain; but our path lay wide of the forest, which afforded us no shade.

Towards evening we came to another river, and, wading across, reached a wee village called Namsai, on the fringe of the jungle. Here we halted for the night. The people, though dressed as Shans, and living in Shan huts, speak quite a different language.

The *pyada* now informed me that four of my porters would return to Putao on the morrow, and would be replaced from this village by men who knew the track; consequently we should have to rest a day, while they collected rations for the journey. He himself would also return, as he was not authorized to go beyond Namsai.

December 1 dawned as clean as the sea. There was no mist. An orange glow heralded sunrise, and the Brahmaputra divide to the north was crystal bright.

Our hut, where we spent the day, boasted only two rooms, besides the open platform outside the front dome. I slept on a slightly raised plat-

form, made, like the floor, of split bamboos, flattened out and woven together at their ends, and derived much enjoyment from watching the dozen other occupants of the room at their various employments.

There were the Nungs at breakfast, for example. Their ration of rice was boiled in a big iron cauldron, and, when dry, strips of plantain leaf were laid across the top and embers piled on it; the oven thus extemporized was set aside, while a chicken was cooked. When all was ready, the rice was emptied into a large, circular bamboo tray, such as is used for winnowing grain, and pressed into as many balls as there were guests, each ball, as it was made up, being wrapped in a leaf. Then the chicken-broth was ladled into cups, and the squatting Nungs fell to eating the hot rice with their fingers.

Not less interesting was their method of smoking opium, an occupation in which they passed the day. A rag, impregnated with the loathsome latex, was first soaked in water in a small silver cup, and heated. Now a strip of plantain leaf was rolled into the form of a tube, and finely sliced (as the cookery books say), and the shredded mass slowly roasted until it was coffee-coloured. By this time it certainly did resemble a rather bilious plug. Finally, this was steeped in the opium water, and the whole was ready.

A bamboo water-pipe, with a short projecting limb for the dope, and no mouthpiece, is used. It is about a foot long, and as large round as a penny. Water is poured into the main stem, and the smoker pulls at the open end of the tube, from time to

time placing a few shreds of tobacco, ignited by an ember, in the spout. After each dose he takes a copious draught of cold water.

In the course of the day I wandered down to the river bank, where there were a few poor patches of cultivation. On the damp sand quivered a vast cluster of thirsty butterflies; they rose in a cloud, like snowflakes, when disturbed, and broke into dancing chains which see-sawed through the air. The whites and orange-tips, which comprised the vast majority, hovered round the same spot, loath to leave, and frequently settled, though never again in such a solid phalanx while I remained; but the rarer species—the panelled swallow-tails and the swift Charaxes—were quickly scared away, and did not return. A dead butterfly, however, proved a good decoy, and attracted many curious companions, who between them pulled it limb from limb; for butterflies, of course, are hardened scavengers.

It is curious how they insist on drinking in company. They are sociable creatures, and though there was plenty of room, they all crowded to the one spot, shoving and butting each other in greedy haste. When I returned to the place at four o'clock, although the sun was yet well up, there was not a butterfly left on the beach. A few, flitting distractedly along the edge of the jungle, were obviously seeking shelter for the night.

The men loaf in the huts all day while the women work, collecting firewood, carrying water, and pounding the paddy. The babies squall with distressing frequency; they are being broken in to a hard world. So wretched a time do they have in their early years—for children are much the same the

world over, and surely these mites pine for an easier existence—that henceforth nothing can distress them. That is, if they live.

In the evening an ancient, white-locked warrior joined us. He wore on his head a woven cane helmet, shaped like a soup tureen, and carried a *dah*. Except for one fang in the middle of his upper jaw, he was as toothless as a fish, but he cackled merrily at obscure jokes as he sat by the fire smoking. After an early supper my Kachin *pyada* let down his hair-knot, rolled himself in his blanket in company with the Shan porter, and lay down to sleep; the Nungs stacked themselves by the fire. In the morning the *pyada* arose looking like a door-mat in a fit, then drew from his haversack a large looking-glass and spent half an hour preening himself.

The new porters having arrived, on December 2 we continued our march. For several miles our road lay over a grassy plain under the burning sun, but before noon we reached the Nam Yin, and scrambled amongst sun-dried boulders, stranded by the shrunken waters. We had left the plain behind us and entered the hills. Heavily curtained jungle muffled the song of the river; but presently the creepers were parted by a troop of long-tailed langurs who went crashing through the branches in loud alarm at our approach. Early in the afternoon, still following the river bed, we reached a sandy bay, and halted, as I was feeling the effects of a bout of fever. December 3 was our last march northwards. Fever had once more got a grip on me, and I found myself unable to proceed.

We continued to follow the right bank of the Nam

Yin—one of the four streams from which the Nam Kiu derives is name—for several miles ; and though my guide complained bitterly about the path, I did not find the going, even over the boulders, exceptionally hard. As a matter of fact, there was no path ; it was go-as-you-please.

During the rainy season it is, of course, impossible to get along. The scene then is very different. The swollen river fills its bed and comes galloping madly down from the hills ; as it rushes along at the foot of the forest, it plasters the lower branches with flotsam. The stagnant air throbs with the roar of flood and the rumble of grinding boulders. Pale wisps of cloud writhe through the tree-tops like wet smoke, and the melancholy drip, drip of the rain from the leaves sounds a perpetual dirge. There is a rank odour of decay in the jungle, though life is everywhere triumphant. Scattered over the dark squelchy ground are speckled pilei in flaring colours, and horrid fungi scar the bloated tree-trunks. Pale, evil-looking saprophytes lurk beneath the creaking bamboos, and queer orchids peep from the bibulous soil. The atmosphere is foul with mould, yet life is at full flood.

The most entrancing ferns carpet the banks with jade tracery, and wave from the tree-tops ; filmy ferns cover the nakedness of the lower limbs, maidenhair and polypody frill the rocks, and the great bayonet fronds of the bird's-nest fern stick up menacingly from the boughs. Mingled with these are orchids, trailing their spikes of long-lipped flowers ; the lounging, leather-leaved stems of Æschynanthus, with pairs of perky scarlet flowers ; bushes of Agapetes, hung all over with urn-shaped pink

bells, like a Christmas-tree; creepers, arums, and sheets of bright green moss. The vegetation, with the thick sap of youth tingling in its veins, overflows in all directions, sprawling and careless in the bitter strife. The slain are out of sight. That is the curious part of Nature's war in the jungle; the dying are visible sometimes, though so well nursed by their enemies (not in love, but in hate) that only a practised eye can recognize them. But the dead are not there, or only very few of them. If you search long you may find some newly slain, but they are already forgotten. Millions died that life might surge sweetly through this green forest, with its infinite variety of strange and beautiful forms, its cool colours and daring contrasts, its tangled order and ordered chaos. But they died very young; at birth—nay, before birth, many of them.

When a giant of the forest dies there is a conspiracy amongst its enemies to hush up the matter. Friends it has none. It is each for himself and all against all. New enemies appear, to feed on the remains. They fight tooth and nail, but in a common cause, to hide the dead. Not till that is accomplished do they turn and rend one another again. And then the great tide of deathless life sweeps on once more; the gap is filled; the dead are forgotten.

But the slaughter amongst the young and the weak and the helpless is frightful. It goes on and on without cessation, behind the fairest scenes. Where life is most prolific, death is most active.

In the jungle there is not only the fierce competi-

tion of plant with plant, for light and air and water; there is a much fiercer hidden warfare carried on with the myriad insect world. In the hot weather the jungle is filled with strange noise, the whirr and drone and hiss of an unseen multitude. It is the war-drum of the six-footed.

After marching several miles, we began to meet strange men of savage aspect. They were watching some fish-traps, which filtered every sluice in the boisterous river; or trailed from stakes driven amongst the boulders, or from low bamboo fences built out from the shore. These half-wild men were Mishmis, who had come over the Krong-Jong Pass, at the head of the Nam Yin, from the Lohit Valley, to fish on the British side of the Frontier.

In stature they were short, but sturdily built, with a mop of cotton-black hair. Their mahogany-coloured faces were round, with oblique Tibetan eyes, and flat noses. They wore few clothes, yet though we were scarcely 3,000 feet up here, it was none too warm by the river; we had not seen the sun all day, and an ominous snow-mist hid the peaks ahead.

A short kilt of thick red Tibetan cloth covered the thighs of these fishermen. The edges are not sewn together, but overlap in front for convenience in marching; so for decency's sake the savage wears underneath a—well, sporan—tight and tiny. A sleeveless cloth jacket and a long scarf, thrown over his shoulders, completes his costume, which, though scanty, is picturesque. Every man carries a short *dah* in an open wooden sheath, and a monkey-skin bag, in which are pipe and tobacco.

The Mishmis come from the hills below Rima, on

the Lohit Brahmaputra, and were much the most Tibetan-looking tribe we had met with yet. They belong to the Assam stream of migration, which diverged towards the south-west, skirting the Irrawaddy basin.

We came now to a cliff, which prevented further progress on the right bank. There was a bamboo raft here, and we crossed over; a slow affair, as the raft would only carry one load and two men at a time—and they were both ankle-deep in water.

On the far bank we met a crowd of Mishmis, going down-stream to set traps, and presently we came to their main camp, a small cave under the bank, on the edge of the jungle. Some of them were splitting bamboos, to weave new funnels, and one man had a good-sized fish in his basket, which my guide bought.

After a rest among the Mishmis, we went on for an hour, finally camping on a sand-bank, and that was as far as we got. At dusk a shower came on, and I set up my little sleeping tent, and crawled in, feeling too unwell to take any supper. All the following day I lay there, hoping that next day the fever would leave me, and I could go on. The sun was terribly hot, so I made the Nungs pluck banana leaves with which to cover my tent. It was impossible to take any food, but I drank copious draughts of cold water from the river, to quench the fever. By evening I could scarcely stand. Four marches would have taken me to the Krong-Jong Pass, from where we would look down into Assam, and it was sad to have to return before we got there.

However, it was the only thing to do, and that

evening I gave the word to return. The men were to make a bamboo stretcher and carry me back to Fort Hertz as quickly as possible.

But here a difficulty presented itself. If the porters carried me, obviously they could not carry the loads as well. The Mishmis were all down the river, fishing. I told the men, therefore, to jettison half the baggage, and send the Mishmis back for it, and, after another weary day of raging thirst, we started south.

Everything went wrong from the start. The men only marched about 3 miles, and then the stretcher was dumped down by the river under a burning sun. For hours I lay there—the porters had gone back for the luggage. In the evening they returned, and carried me to a temporary shelter they had built, and lit the fires; but I woke up in the night, crying for water. I had had no food for two days. The men smoked opium incessantly—before breakfast in the morning, and after supper at night. I watched them with a curious fascination. On the following morning my guide told me, in his broken Burmese, that the men could not carry me over the boulders by the river—it was too difficult for them. But there was a path through the jungle, over a spur, and so we went that way, and in the afternoon reached the ferry where the Mishmis were. We crossed on the flimsy raft, and at dusk reached our previous camping-ground.

The night dragged. From time to time a man rose up to put more wood on the fire. I was feeling weak, for it was now three days since I had eaten any food.

Dawn at last, chill and misty. The Nungs were in no hurry, and I could only whisper instructions to my guide. But at last we started, and leaving the river and the jungle behind, came out on to the plain itself. The sun beat down fiercely as we came, early in the afternoon, to the village of Namsai. Here I was able to eat two raw eggs.

On December 11 we marched across the plain to Manse Kun, and came to the bank of the Nam Palak, where we camped. It is a common fallacy that sand is soft. True, you can mould it to the required shape, but in point of fact it is cruelly hard to sleep on. Once more I passed a nightmare vigil.

How thankful I was to see the grey dawn on December 12! How terribly slow the men were over breakfast, which did not interest me. A dug-out was drawn up on the beach, and presently I was laid in this, and off we went.

Arrived at Fort Hertz, I was taken straight to the Civil Hospital, where the doctor and his assistant kindly attended to me and made me comfortable. On the following morning Captain Cousins, of the Military Police, who had taken Leeming's place, came across and insisted on having me moved into his bungalow, where I was well looked after both by Cousins and the Civil Surgeon.

With this failure ended my second attempt to march overland from China to India direct; but I had at least come much nearer to complete success than on my first venture in 1913.

The feat has been performed three times. In 1895, Prince Henry of Orleans, with two companions,

succeeded in crossing from China to Assam, and I had in part followed his route to Hkamti Long. In 1906, Mr. E. C. Young made a journey from Yunnan across the Kachin country to Hkamti Long, keeping south of Prince Henry's route, whence he too reached Assam.

In 1911, Major F. M. Bailey made a brilliant journey across a corner of South-eastern Tibet, whence almost skirting the sources of the Irrawaddy, he struck the Lohit River and followed it down to Sadiya. He was the first to reach India from China via Tibet.

The first two travellers both reached the plain of Hkamti Long, as I did. This certainly affords a breathing-space, and of course, since the British occupation, the direct overland route has become a comparatively simple matter. Any traveller marching into Hkamti Long from China is assured of a warm welcome from the one or two British officers stationed at Fort Hertz, and he can rest there before continuing his journey.

There is a choice of three routes to Assam from the Hkamti plain:

(i) Over the Chaukan Pass, south-west of Fort Hertz, to the Singpho village of Kamku, on the Diyun River; or

(ii) Over the Phungan Pass, almost due west of Fort Hertz, and thence down the Dapha River to Kamku. By either route Sadiya is reached direct.

(iii) Over the Krong-Jong Pass to the Gaulam River, and so via the Lohit to Sadiya.

Whichever route one selects—and there is probably little to choose between them—it is necessary to prepare for a fortnight's march through uninhabited

jungle, during which time not a village nor a hut will be seen.

Two days after my return to Fort Hertz, while I was still in bed recovering from the effects of the fever, a telegram arrived from the local government granting me permission to cross over into Assam. It was then too late.

## XVII. CHRISTMAS

CHRISTMAS week was approaching, and with it the Durbar. The Commissioner of the North-East Frontier was due from Mandalay on the 17th.

As dusk fell on the evening of December 16 the Shan *sawbwas* from the northern villages moved solemnly out of the station to take up position. They intended to spend the night at a spot about 5 miles down the road, in order to welcome the Commissioner early on the following morning, and escort him in. It was a cold grey evening, with shapeless masses of cloud about, and the sun set gloomily over the Assam ranges.

The rich *sawbwa* of Man Se was mounted on his elephant, but the *sawbwas* of Putao and Man Se Kun, not owning elephants, rode ponies. These were stylishly caparisoned with coloured saddle-cloths and native saddlery. A slave held a tall, golden umbrella over the sacred head of the rider. Each procession had its quota of drums, gongs, and cymbals, and marched with funeral slowness down the road to a monotonous and very unmelodious clanging. The village escort, who carried the instruments and held aloft the gilt umbrellas, though well wrapped up against the inclement night, were from our point of view poorly clad. A cotton *lonegyi* and jacket, with a striped blanket

thrown round the shoulders, is inadequate to keep out the penetrating cold of the plain in mid-December. No one envied them their vigil, for the warped air of the plain was as clammy as an eel. There seemed to be more moisture than oxygen in it, and the whole atmosphere, tightening in the cold just before sunrise, wrung this out as from a sponge. It drenched the long grass, and dripped dismally from the trees.

One by one the sections mounted the ridge from the plain below, crawled down the firm cantonment road, and disappeared into the murk. An incessant din enveloped each, grew mercifully fainter, and died away in the distance. The Shan chieftain cannot travel without noise. And such noise! It beats into the brain with maddening zeal, and must rouse almost to frenzy anyone accustomed to think consecutively.

December 17 was the great day. At nine o'clock a dense mist, through which the now eager sun had not yet pierced a passage, overhung the plain. The raw air had a ragged edge. Before the procession came into sight on the ridge, the blended jangle of many gongs and drums announced its approach.

Clang! clang! clang! in slow monotony. An amorphous and discordant clang, clang, clang—nothing more, though a hundred instruments were being thumped. In that sodden air vibration was strangled. Gongs large and small, shrill-voiced and base, dull drums, harsh drums, cymbals, all pooled their individual noises to remit one colourless row, as when many vivid paints are mingled, only to produce a drab combination.

At this moment a troop of gibbons broke into their morning hoot from the jungle in a near-by *nalla*. Their jubilant cry is more musical than the crude inharmony of Shan gongs.

At last the head of the procession, entering upon the straight road which divides the cantonment, loomed through the mist, and the noise grew louder. In the van marched the band, the deadly slow pace of which was quite in keeping with the melancholy music. A solid phalanx of villagers, several hundred in number, followed. In the middle of the column, escorted by the *sawbwas* themselves, walked the Commissioner, the Deputy-Commissioner, and the officers of the station, who had ridden out to meet them. A cluster of umbrellas waved and glittered over their heads. The whole party had come in thus on foot, surrounded by the solemn escort, from Lone Tree, where the *sawbwas* had passed the night. The village folk looked cold and ghostly, for every man and boy had enveloped his head and most of his face in a white towel to keep out the rank air. A few wore the conical leather helmets, painted black or gold, peculiar to the Hkamtis.

In rear of the long, deep column, which filled the roadway, tramped the elephants, and all down its length swayed and bowed the slender golden umbrellas of royalty. The ponies were being led by orderlies along the side of the road, for they disliked the elephants.

And so the triumphal procession entered Fort Hertz. Opposite the Assistant-Commandant's bungalow it halted, and the noise ceased abruptly. The Commissioner and his party detached them-

Shans at Fort Hertz during the Durbar.

Mishmis at Fort Hertz.

selves from the main body, and the escorting *sawbwas*, with their ponies and elephants and umbrellas, still headed by the now mute band, passed down the ridge to their several villages on the plain below.

We had just finished breakfast when the sun, roused at last, began to tear rents in the milk-white mist. So we carried our chairs outside and sat down in the waxing warmth, to watch a scene of marvellous beauty unfold itself. The mist, which an hour earlier had appeared solid in its opaqueness, was merely cobweb, after all; it was fraying in all directions. Huge windows opened suddenly, displaying pictures of a world beyond the plain, and we looked out on to the gleaming snow-clad ranges of Assam and Tibet.

The white dome of Noi Matoi, whence rises the western branch of the Irrawaddy, swam to the surface of the milky sea, and remained floating in space. Even the peaks above the Shingrupkyet, which overlooks the boisterous 'Nmai kha, where the sun rises, a hundred miles away, were mottled with snow, while the Assam ridge to the west was heavily furrowed.

Then the last shreds of mist melted, and the tusk-shaped wall, Burma's northern rampart, stood out clearly in harsh grandeur. It towers up there, aloof and scowling, as it has done since the days when it was built, untold ages ago; its rivers shout a savage warning to the hardy races beyond not to venture southwards into the Irrawaddy jungle.

How was this barrier raised? Perhaps in some slow convulsion of the earth's crust; perhaps in some acute cataclysm; but no one knows. It is

crushed between the mightiest uplifts on the globe, and it is not unworthy of them.

And so the first day of "Putao Week" promised to be fair. A hundred yards from where we sat the heated air shivered above the grass like a colourless flame, so that objects seen through it were blurred with teasing outlines. It would be hot later. For a fortnight we had scarcely glimpsed the Lohit divide. Day after day, billows of cloud had heaved themselves up against its iron flanks, hiding every peak and gully in froth, and now, with the arrival of the Commissioner, the storm abated and the clouds parted, and the far corner where Burma, at the birth of its great river, thrusts a wedge hard up against Tibet, was sharply revealed.

Immediately one began to realize the infinite variety of this immense and splendid province, its infinite possibilities for good in the world, its infinite future. What an amazing opportunity! Burma, the land of golden promise! Briefly let us recall its history since the British connection. After the first Burmese war, the coast from Victoria Point to Arrakan, where three centuries earlier the Portuguese corsairs had roved supreme, fell into British hands. Then, after a period of peace, came the second war, and Pegu was taken; meanwhile Rangoon was being developed into one of the great seaports of the East. At this time Lower Burma, as far north as Pegu, was under the influence of Britain. And still the torch which was to weld together the warring races was borne northwards.

There followed inevitably the third Burmese war, the fall of Mandalay, and the slow pacifica-

tion of the seething north. With infinite patience, through long trying years, Burma as far north as the confluence of the Irrawaddy was brought under control. Beyond that was no man's land. From time to time whispers reached the outer world, but none knew whence came the great river or of the manner and place of its birth. Was it the Tsangpo? Was it the Salween? It has been both in its history!

Just twenty-five years after the annexation of Upper Burma the last act in the drama opens. Not without grave misgivings, yet in steady pursuance of a policy, the justice and wisdom of which had been amply vindicated, the plain of Hkamti Long was occupied. The power that could scorch and heal had advanced to the utmost limit of Burma. A new significance would henceforth attach to the name. With this final move practically the entire basin of the long, mysterious Irrawaddy came under direct administration, and in December, 1922, for the first time, a Commissioner gazed across from the most northerly post in the province to where British Burma links on to Tibet.

No geographical violence has been done. The closed ways are open—that is all. We speak of the Tibeto-Burman family. We have reason to believe that the races, many of them at least, now inhabiting Burma, came originally from South-eastern Tibet. How did they come if not by the Irrawaddy Valley? It is only right that Burma and Tibet should join hands along the border, which we call the North-East Frontier.

When we look back on the earlier history of this vexed but fascinating land, the immense task

which is being slowly, almost imperceptibly, accomplished will be better appreciated.

Formerly race warred with race for dominion. All strove naturally to reach and occupy the great plains, the fertile valleys of the south; to snatch for themselves the rich silt which the tired river is ever laying down—silt reaped so easily and borne so triumphantly, when the river was young, from the plateau of Tibet.

So Shan strove with Burman, and Talaing with both. First one triumphed and then another. Fortune swayed dizzily up and down the country, from Moulmein to Mogoung. It was impossible to foresee the end.

But no one troubled about the ranges. Yunnan, Tibet—they were vague abstractions. Even the tangled skein of mountains, neither Yunnan nor Tibet, whence a hundred loud rivers come galloping down to the plains, were unknown and unknowable. And yet to the north, not far away, lost in the jungle, were powerful tribes, cousins to the Burmese themselves. And again in the still loftier ranges to the east were ambushed other tribes. And always the deeply eroded channels, choked with the brooding jungle, highways by which men had pressed southwards, pointed the way to the open plains.

What if these tribes, lurking in their forest fastness, came south? Nay, they had already begun to trickle south, following the ranges. . . .

Formidable, however, as are the geographical barriers, it has always been political rather than physical obstacles which have stemmed migration, damming back tribes and hemming in outliers of

more historic races; preventing free intercourse throughout what is clearly a geographical unit.

Could the genius of Britain, the devotion of Englishmen, open the closed ways and weld into one happy whole the distantly related and suspicious members of the many tribes who occupy the North-East Frontier? That, at any rate, is what England has tried to do. From Victoria Point, nosing towards the equator, to Hkamti Long in the grey north, across 18° of latitude, the long furrows ploughed by nature are being sown for a richer harvest than the past has yielded. And as we sat in the sunshine at Fort Hertz, gazing at the finest scene in all Burma, I pondered these things.

The Deputy-Commissioner had arranged for a rehearsal. He knew his men. Without a preliminary canter there would assuredly be comic relief on the day itself. During rehearsal the buffoons and dullards could get quit of the fun stuff, and be in good form for the real thing.

The function was to be held in a shed which stood in the playground of the vernacular school —actually the gymnasium and drill-hall. The school stood at the lower end of the village, beyond the shops. It had come into existence a year ago, thanks to the energy of the present Deputy-Commissioner, and was an institution anyone might be proud of. Started primarily for Shan children, the *sawbwas* had been cajoled into providing funds, while Government provided the site.

Here was ample space for the Durbar. At one end of the enclosure stood the school itself—an airy bamboo-mat building with thatched roof; at

the other end stood the shed. In the playground between them the sports and dances were to be held. The common people, who were not admitted into the Durbar Hall, had free access to this green acre. A passage, however, was fenced off, leading from the school gate to the audience-chamber, to allow of the elect passing scathless through the crowded field; and on the great day this bamboo fence, decorated with plantain and palm leaves, formed a picturesque avenue. Most of the chiefs from distant parts, and the Lisu dancers, had come in on the previous day, bringing presents for Government. These were to be displayed in bulk at the Durbar itself, but not presented by individuals.

About one o'clock the Deputy-Commissioner mounted the dais. The winners of rewards for good service were already seated on and off their chairs, in varying degrees of discomfort. This must have been aggravated by the fact that many of them—not all—were dressed in their 'other' clothes. Everybody fidgeted. I was reminded of a preparatory school on speech-day. This idea may have drawn some of its inspiration from our ominous surroundings; it was confirmed by the Deputy-Commissioner on the platform.

The latter now rallied his flock in several languages, skipping from one to the other with the ease of a trick-pianist resolving "God Save the King" into "Swanee." The rehearsal had begun.

A word as to the arrangements in the Durbar Hall itself. The hall being, in fact, the school shed, was open on the flanks as well as at both ends. Curtains, however, had been rigged up to keep off the afternoon sun, and the end where the

platform stood was temporarily closed. The entrance end was partly closed by means of a paper archway, and the whole—posts, rafters, and temporary walls—was decorated in the Burmese style with coloured paper and strings of small paper flags of no known nations. To the left of the platform an annexe had been added, and the body of the hall was filled with assorted chairs lent by the officers and shopkeepers.

The reader, therefore, must picture to himself a rather makeshift chamber brought up to a pitch, if not of perfection, at any rate of adequacy, by the keenness of the local officers. The hall, indeed, looked extremely presentable on Durbar Day.

The prize-winners were arranged as follows. In the front row, to the right of the dais, sat the Subadar-Major, the Hospital Compounder, and Lahpai Yo, who is King of the Ahkyang Valley. Behind these Government servants came the Hkamti *sawbwas*, dressed in check *paso*, almost hidden by a long white coat and white turban (they looked as gruesome as hospital-dressers). Behind the Shan chiefs again came some of the Kachin *duwas*.

In the orchestra stalls to the left of the dais sat the " Triangle " chiefs, with the Kachin chiefs from administered territory directly behind them. The pit was reserved for several *taung-ok* from the 'Nmai kha.

The space immediately to the right of the dais was sacred to the British officers, none of whom had won prizes; that immediately to the left was the annexe. Here seats (on the floor) were allotted to some forty school-children and to the *hpongyi*, or monks, from the monastery.

To come now to the rehearsal itself. After the Subadar-Major had been presented to the Deputy-Commissioner by the Battalion Commandant, and in dumb show had received a sword of honour, the Deputy-Commissioner read out the names of the *sawbwas*, thus :

" The *Sawbwa* of Langtao, *paso* and *gaungbaung*."

The awful moment had arrived. Smith Minor, blushing with mingled pride and shame—it is a disgraceful thing to win a prize for learning at school—could not be more self-conscious than was the wretched *Sawbwa* of Langtao. He crept cautiously out of his seat and advanced in a hesitating manner to the foot of the dais. Here he performed a peculiar rite, something between a benediction and a kow-tow, which so astonished the Deputy-Commissioner that he stepped down from the platform and himself gave a perfect rendering of a *shikoo* as an illustration.

The ice being broken, the remaining *sawbwas* of the Hkamti Long Shan states were called up in order of seniority, or dignity, or age perhaps. Man Se, Man Se Kun, Lang Nu—I do not know the order of precedence, but it is as rigid as in any Oriental state—approached one by one and received each his *paso* and *gaungbaung*—in dumb show.

One instinctively thinks of the Hkamtis, at any rate the men—the women, who work, are more virile—as poor; degraded-looking wretches, hollow-cheeked and drab-eyed, without energy or grit. But it must be confessed that these *sawbwas* momentarily exploded the idea. There was a certain austere dignity about them. They looked

the part. They soared above the common herd, like eagles over carrion feeders, though accustomed less to exercising authority than to accepting homage. Theirs was, perhaps, a static tyranny even in the palmiest days of Shan dominion; for, in the East, custom overrides even monarchy, and hence there is less scope for the exercise of whimsicalities than in the country and days of, say, King Richard III.

One old man, tall and thin, with a pale, scholarly face and a wrinkled brow—he was Man Se, I think—looked the ideal of Oriental absolutism. He seemed more priest than king. His eye was mild, but it was belied by a small, cruel mouth; yet his whole expression was pacific. He looked, indeed, a scholar, and would have been accounted handsome in less discriminating circles. One felt that he had casually condemned poor wretches to be tied between crossed bamboos, bent to the ground by the strength of elephants, and then cut loose; and had turned away, bored by the interruption, to finish his translation of the *Kyan-sa* for the library at Alexandria.

On the other hand, there was the Pangleng *sawbwa*, a familiar figure in Fort Hertz. He was a stout man with a dark complexion and deeply lined face, the heavy jowl and little pig-eyes of which were not prepossessing; but a smile always lurked behind the mask, ready to communicate itself to all parts of his face. He spent much of his time toddling aimlessly round the village, or sitting in Fan Li San's shop, with the air of one trying to cadge the moon or other remote object on which no one person had any special lien. Though one of the

trustees of the school, and high up in the hierarchy, he was rather a disreputable old man. But he was known to possess a beautiful wife.

The essential dress of these chiefs I have already described. But there were furbelows. One old man had a gold (or was it brass ?) band tied round his forehead with red cord. This chaplet was decorated with an inscription in Burmese, and was, in fact, an appointment order from the late King of Burma. The Shan huts to this day point south, towards the suzerain power of Burma. It was not always so. Once in their history they pointed north towards Tibet. But never did they point east.

As soon as the chiefs approached the dais, one noticed that though most of them went barefooted (and had omitted to wash), one or two were experimenting with socks and shoes. These advanced thinkers evidently considered themselves unworthy to tie up the latchets even of their own gear, and were in constant danger of tripping over the trailed laces.

The barefooted *sawbwas*, on the other hand, created consternation by sitting on their chairs Buddha fashion, with their feet curled under them. Even jungle royalty must conform to convention, and they were requested to place their feet on that element to which they are obviously adapted, and not aspire to be monkeys.

The *sawbwas*, then, having been told what to do and taught how to *shikoo* (though some of them failed dismally to profit by the lesson), succeeded in reaching the platform and receiving their gifts without committing any serious breach of etiquette,

though some of them in the rear persisted in breaking through the orchestra stalls, tripping over the feet of the occupants, and hiding the view. They were sent back to do it again.

But getting away was harder. The recipient of a gift from the *Sircar*, on departure, must not turn his back on the *Sircar's* representative. Hence arose further complications. One old man, rising from an exaggerated obeisance, stepped on the hem of his *paso* with almost fatal consequences. Having, however, failed accurately to locate his seat, he took the wrong turning and alighted in somebody's lap, much to that gentleman's surprise.

Future competitors, realizing the pitfalls attending a prolonged retreat backwards, adopted the *chasser*, which enabled them to snatch furtive glances over the shoulder, in order to steer a true course. Once more or less concealed amongst the chairs, they gave up all pretence of going astern, and, crouching low, struggled to their chairs and subsided thankfully into them.

After the Shans, the Kachins. The Deputy-Commissioner gave them a fatherly talk, and they signified that they understood what was expected of them.

But if the *sawbwas* were *gauche*, the Kachins were grotesque. They were presented in turn by the officers from whose subdivisions they came, and the reward they were to receive was similarly announced.

Then followed the performance. The first man in, having shambled to the foot of the steps, gave the most amazing parody of a *shikoo*. Clasping his hands above his head, he prepared to go straight

in off the deep end. Others adopted a parson-like attitude. It was the best turn of the entertainment. Had it been the real thing, I should have had to record 'muffled laughter.' Being only a rehearsal, there was no muffling about it. We choked with delight, earning a mild rebuke from the Deputy-Commissioner. Order being restored, the rehearsal continued.

As for the Kachin *duwas*, though not so beautifully dressed as the Shans, it must be remembered that in their own country they are far bigger men. The average Hkamti Long *sawbwa* rules over two or three villages at most; sometimes over no more than one village, plus a few scattered huts. On the other hand, some of the Kachin *duwas* present were autocrats of twenty villages—and villages in the "Triangle" are garden cities compared with some of the Shan villages. Several of these *duwas* looked like any Kachin such as you meet on the road—baggy trousers, jacket, and turban, none too clean. Contrast with this one old man who wore a magnificent Chinese gown, richly embroidered. True, it belonged to a former dynasty, but the workmanship, at any rate, was none the worse for that. He was a short man, and the coat came down to the ground like a dressing-gown, almost concealing a very dirty pair of feet. One of the "Triangle" chiefs, Lakpai Li by name, a powerful and influential *duwa*, was a terrible sight. He had been slashed clean across the face just below the level of the eyes with a *dah*, and the wound had never been sewn up. Consequently, instead of a weal, there was a gaping slit through which it seemed possible to see inside his head;

it was not so much a scar as a hinge by which the top of his skull might be lifted up. He seemed, however, unconscious of his awful disfigurement; at any rate, indifferent to it. His brother had done this thing. Why? *Cherchez la femme.*

Ngalan La, another omnipotent "Triangle" chief, had not come in at all. It was said that he had refused to come unless he were permitted to bring an escort of fifty armed followers—that is to say, warriors with guns. The reason given for this proposed extensive mobilization was that, being a man of many feuds, he might be murdered on the way.

Ngalan La's father had known—and flouted—Errol Grey, the elephant-hunter, nearly half a century ago. (That was in the old days, long before the first column from Burma penetrated to Hkamti Long. All the early explorers came from Assam.) However, a few days later, Ngalan La pocketed his pride and accepted the Government's invitation. Though too late for the Durbar, he arrived in time for the race-meeting.

One or two of the Kachins received gay garments, but most of them were made happy with more manly gifts, such as a gun or blanket. A *duwa* of the Sumpra Bum tract, who had proved friendly to one of the original columns, received a cap-gun, which somewhat displeased him. "For," said he, airily, "I have plenty of these," and, having stared a gift-horse sourly in the muzzle, he asked if he could have it changed for a shot-gun. The answer was in the negative.

One man did indeed receive a shot-gun—Lahpai Yo, *kayaing-ok* of the Ahkyang, that corner-stone

of the North-East Frontier. He is a kindly old man, devoted to his work. He wears spectacles, through which he peers out on the world with a benign expression, at once scholarly and sympathetic. He has served the Government for many years in the Ahkyang Valley. He it was who brought the Lisu dancers in to dance before the Commissioner. Never before had Lisu been seen at headquarters, for they are shy birds. It was a triumph of tact, and might have far-reaching consequences; for the Lisu, though an incorrigible thief, is a desirable colonist.

After the presentation of the Kachins from Sumpra Bum, and from the unadministered territory across the Mali kha (shortly, the "Triangle"), came the turn of the *taung-ok*. These people came from the eastern hill tracts, beyond the Nam Tisang, and were introduced by the Assistant Superintendent, Kawnglu Subdivision.

They were all three big, grave-looking men, with iron-grey hair and stolid expressions. Government provides them with thick khaki coats, something like a "British warm," and, since they wore these, there was no scope for fickle fashion. They performed their devotions at the foot of the dais, and the rehearsal came to an end.

Meanwhile the Military Police were hard at work in the field preparing an obstacle course, for there were to be sports. The hard labour at these functions is always assigned to the Military Police, and they always do it cheerfully—and efficiently.

After the rehearsal, we strolled across another meadow to the banks of the Nam Hkamti where a long grass barrack, divided into snug quarters,

had been erected for the guests. Here lived the Kachins and Lisu for three days. The Lisu girls were already at work, drawing water in bamboo tubes. One—she was little more than a girl—had brought her baby with her from her distant hut in the Ahkyang Valley.

While all this was going on, we had failed to notice that the mountains were blotted out in a welter of evil-looking cloud, ripe for mischief. Our attention was drawn to the fact by a rumble of thunder. It was growing late too. The field had emptied; only the sepoys worked on. We started back for the post, two miles distant; but, even before we reached the ridge, part of the storm detached itself from the Assam range and swept hotfoot across the plain. Then it burst in a clatter of hail. Close on its heels came the lightning, flash after flash, and the roll of thunder in the mountains. In five minutes we were drenched.

The Durbar decorations, at any rate, would be ruined. How bedraggled the hall would look, with its limp paper finery! If it rained on the morrow—and the wrath of the massive cloud-bank was not half spent—it would be tragic. The people would not come. There would be no sports. A bare ceremony and all would be over.

We went to bed that night encouraged by the fact that a few stars were visible through the cloud canopy.

## XVIII. THE DURBAR AT HKAMTI LONG

THE station was stirring early on December 20. The previous night's rain had washed the mist out of the air, but the mountains were still veiled in cloud.

All roads this day led to the school. The familiar clamour of gongs told of *sawbwas* on the march. The street, where the half-dozen Chinese shops are situated, and the new wooden bridges over the twin streams, presented by the municipally-minded Fan Li San, were gaily decorated. Flags fluttered from the shop-fronts. Two wayside stalls, embryo shops, had been set up by enterprising householders outside their front doors. They sold nuts and matches.

At ten o'clock the Deputy-Inspector-General of Police arrived, and the party was complete. Never before had Hkamti Long beheld such a gathering. Nine Britons ! There were the Commissioner ; the D.I.G. Military Police from Mandalay ; the Deputy-Commissioner ; the Battalion Commandant and Assistant Commandant, Fort Hertz ; from the Kawnglu Subdivision had come the Assistant Commandant and Assistant Superintendent, not two persons, but one ; and from the Sumpra Bum Subdivision the Assistant Superintendent and the Executive Engineer, P.W.D. Finally, there was myself from China.

At eleven o'clock the sun came out, and the clouds began to disperse. By this time people were beginning to take their places in the Durbar Hall, and the playground was filling up with the proletariat, dressed in their best. It was interesting to watch the élite arriving. The Shan chiefs dismounted outside the gate, and walked through the avenue to the hall. Their ponies and elephants were tied up in the road outside, amidst a forest of large golden toadstools; at least, that is what they looked like, but, as this is not a fairy-story, I may add that they were really the closed umbrellas of *sawbwaship*.

The *hpongyi* in robes of glowing orange were carried in doolies, right up to the entrance to the annexe, where they squatted on mats; the little school-children, looking very neat and gay, were already in place, also squatting on mats.

The road was now quite crowded with people, of all ages and both sexes. The Kachin *pyadas*, a village police, magnificent in khaki uniform and scarlet turbans, and armed with sticks, were having a field day. Never before had they been so important. They strutted. They chivied the men and chaffed the women. If one of the vulgar crowd ventured inside the railed avenue, two *pyadas* came down on him like wolves on the fold and hounded him out at the double.

Excitement ran high when the guns arrived, trundled down by the sepoys. They were placed one on either side at the entrance to the hall.

The hall was now practically full. It would only hold about eighty people, or rather that was the maximum number of chairs available. How

thankful the furniture committee must have felt that *hpongyi* and school-children like to sit on the floor! I dare say many of the prize-winners would have liked to do the same, really.

After all, the previous night's rain had not damaged the paper trappings; on the contrary, it had freshened them up a bit. Drenched in sunshine, the many-coloured crowd—there were between two and three thousand people present by this time—looked most attractive against the mountainous background. Practically every tribe in the district was represented.

There were Nungs and Lisu from the east; Dulengs and Kachins, some of them from the Trans-Mali country; Hkamti Shans, Burmans, Gurkhas, and natives of India, besides Panthay muleteers from Yunnan in sober blue; and there were even a few Mishmis from the Lohit River, beyond the snow-capped range.

The arrival of the Military Police guard-of-honour, headed by the pipe band, was the signal for further excitement. As the pipers, playing a Scottish march, swung into the meadow, the lethargy of the crowd almost visibly dwindled. They became animated. They gaped. The band was amazingly good, for the stirring tune tugged at the exiles' heart-strings; and that is high praise. Suddenly the Union Jack was run up, and the guard stood to attention. A hush fell on the surging crowd. Down the road from the direction of Fort Hertz trotted a small cavalcade. It was the Commissioner's party. They turned into the gate and dismounted; then walked to the Durbar Hall. The crowd rose as they entered. No time was wasted; and the

Commissioner and Deputy-Commissioner having taken their seats on the dais, the latter at once rose and asked leave to declare the Durbar open.

The Commissioner then addressed the mixed assembly.

Now, if the Shan *sawbwas* in their egoism, or the Kachins either, thought that the Commissioner had come 500 miles to tell them what fine fellows they were, they must have been bitterly disappointed. There was no flattery, just a plain, unvarnished, intimate talk. A little gentle chiding was woven into the discourse—for, after all, these people are but wayward children—but a barbed hint was added that, if necessary, Government would act. In certain eventualities, things, unpleasant things, might—nay, would—happen. They must just be good children and behave themselves.

The Commissioner congratulated the Shans on their school, and added dryly that, now they had got it, they had better send their children there. The attendance was paltry. Passing to other matters, he referred to the labour problem. They objected to work on the road, or as coolies. The only alternative was to cultivate more land. In that case it might be possible to introduce labour from outside. At present it was impossible, because there was no food. The shaft went home. The Hkamtis hate work. Rumour said that they had prepared a petition, praying to be let off coolie labour. And now the Commissioner had cut the ground from under their feet by placing the remedy in their own hands. They could take it or leave it. But was the disease as painful as the cure?

To the "Triangle" chiefs the Commissioner said

a word in season. These warriors, though friendly to Government, were jealous of their independence. That independence the English would respect, so long as the Kachins remained friendly. Government had no desire to interfere in the affairs of the "Triangle." But hostility would not be tolerated; it would inevitably call down retribution. This is, of course, the lesson of history, at all events in India. The history of British expansion in India is the history of other peoples' squabbles. With that passion for law and order which seems to be a legacy of the Roman Empire, the English have always resented disturbance in their neighbours' backyard. Lawlessness is contagious. It may readily become epidemic. Amongst certain peoples it is chronic.

The opening up of a region which has neither supplies of food nor supplies of energy, and is remote from either, must always be a slow business. It can be hastened by only one factor—war. The angle of vision changes, and the region becomes, not economic, but strategic.

The North-West Frontier is a barren and repulsive land. It is excellently provided with roads and railways. No one stops to ask, "What is there to be got out of it?" If they did, the answer would be, "Nothing." It is enough that it is the land-gate to India.

The North-East Frontier is a different proposition. It long remained remote and inaccessible, because it offered no through route to India; and the tribes were not a serious menace. Yet at the first hint of aggression, roads were built, posts established, and the region promptly administered. The

slowness with which the opening up is proceeding is due to the fact that the threat long ago faded into the *ewigkeit*. Nor is there much prospect of acceleration under so peaceful a regime; for the necessary geographical factors are lacking. There is no doubt much in the country. It is, at any rate, a naturalist's paradise. But though Government would find the money with which to build roads—aye, and railways too—quickly enough for the chastising of men, it can hardly be expected to do so for the chasing of butterflies. The naturalist must look out for himself.

Every district in India has its local problems and difficulties, and the above are a fair sample of those which agitate the breasts of *sawbwas* and *duwas* on the North-East Frontier.

The Commissioner disposed of them, one by one, in plain terms. He left no room for doubt in the mind of any man as to the future policy of Government.

After the speech came the prize-giving. The procedure was the same as that at the rehearsal, so there is no need to dwell further on it. The chiefs rose to the occasion, more or less, and there was no buffoonery.

As each present was bestowed, the English clapped loudly, and there trickled up and down the hall a palpitation like some badly played scale. It was the crowd trying to clap too. The Deputy-Commissioner had coached them in the art only the day before, but they did not take to it kindly. The Oriental does not instinctively congratulate his neighbour on a success; still less does he solicit congratulation from his friends. Self-preservation

requires rather that he shall efface himself until his power is at least commensurate with his ambitions. The Kachins might easily argue that the English *duwas*, when a prize was presented, gave the symbol for a beating. They were free to speculate whether it meant "the recipient has been beaten," "the recipient will be beaten," or, more probably, "the recipient ought to be beaten."

After the prize-giving the school-children, from their *pandal*, chanted a hymn of praise, and on this note of juvenile fidelity the official part of the programme came to an end.

Everybody trooped out to mingle with the proletariat, and the proceedings became informal.

At once the sports were organized on a socialistic basis. The *Myook* announced a 100-yards race and called for volunteers. But the crowd preferred the safer, if less spectacular, rôle of onlookers, and he had to haul likely-looking athletes out of the mob, and chance it. Once started, the sports went with a swing. Shyness disappeared. Competitors flocked to the starting-post in such numbers that they were difficult to cope with. The all-comers 50-yards race looked like a General Election.

And now came the star turn of the afternoon. The Lisu dancers were tuning up.

Native dancing is not, as a rule, very exhilarating. It lacks rhythm. It is plain and rustic. There are no intricate steps, and the music, which is supplied by the management, is crude. Nevertheless, there is a certain charm about the Lisu dances. Perhaps it is the dancers themselves, for the girls are quite nice-looking. Perhaps it is their picturesque

costume, which is neat and homely, or it may be that they bring with them the spirit of the mountains. They certainly drink the spirit of the mountains. At any rate, the Lisu are the best dancers in these parts.

In the first movement, men and girls faced each other in two lines, as in any country dance, and, to the uproar of half a dozen bamboo jews' harps, they tripped to and fro. The crowd, forming a close ring, watched them with breathless fascination. Except for the twang of the instruments and the soft patter and shuffling of bare feet in the dust, there was no sound.

Those jews' harps were cunning. Some were tweaked with the finger, others more subtly twitched with a string. " Buzz ! twang ! twang ! " they said ; " buzz ! twang ! twang ! " And the lines of dancers trotted backwards and forwards, stamping their feet in rude time to the waspish music. When they grew tired they halted abruptly.

In the second figure, the dancers formed a ring while one man, cutting capers in the centre, rasped on a Chinese guitar. He kept up a running conversation, and kept the others in a fume of laughter.

Warming to their work, they formed again, and returned to the " nuts and may " dance. Occasionally the funny man would frisk a little on his own, and gambol out of his orbit (under the influence of some star) with an extra step or two ; but his feet never got out of hand. They needed a little alcoholic stimulation to be really frolicsome. The young woman with the year-old baby, had brought him (her or it) with her. It reposed in a noisome blanket

on her back during the performance, and slept peacefully throughout.

For the last figure, men and girls again faced each other; but the lines closed up so that they could rest their heads on their neighbours' shoulders. They did not stamp their feet now, and the twang of the bamboos had ceased. Then, to a sort of swaying motion, they sang a crooning song. What they sang no one knew. Lisu songs, as a matter of fact, generally refer to their misty mountain homes. They love to sing the praises of the dim, dripping forests, and the cascades which clatter down from the frontier ranges where they live; of hunting days tracking the shy *takin* through the endless bamboo, and of cold, starry nights by the red campfire. The Lisu are, I think, the most picturesque people on the North-East Frontier.

The girls were dressed in the costume of the tribe, but the men were dressed anyhow, in odds and ends of Chinese attire, with garments of their own. Only one man wore the long Lisu gown, slit up the sides and tied round the waist. Slung over the right shoulder, they carried bags of grey monkey-skin. As for the girls, they were certainly much nicer-looking than any Shan or Kachin woman I have ever seen; for they had rosy cheeks. Not knowing the jargon of female attire, I can give only a rough description of their dress. A kilt or petticoat of white hemp cloth, thinly striped with pale blue, and a jacket to match—nothing else. The stripes run transversely. The ample kilt, tightly girdled at the waist, hangs in pleats; the long-sleeved jacket is low in the neck and loose in the waist.

Lisu girl and baby.

Lisu man and girl.

All wore their hair in pig-tails—some of the girls boasted two. These usually hung down like bell-ropes, but were sometimes neatly bound on top of the head. The girls go bareheaded, except for a crown, from which hangs a *chic* of beads, buttons, and tiny brass bells, forming a fringe over the forehead. A few bead necklaces and large ear-rings complete the decorations.

We had tea in the now empty Durbar Hall, while the sports were going on outside. A crowd had collected round the greasy pole, and many competitors essayed to climb it. Every device was resorted to, from taking up a pocketful of sand to climbing in couples, the top man standing on the shoulders of his mate. But it was long before the fortress yielded, amidst the cheers and jeers of the mob.

At the conclusion of the sports, the Commissioner gave presents to the Lisu, who had come so far to dance: scarlet blankets to the men, and strings of beads, thread, buttons, and general haberdashery to the girls. It was good to see the delight with which they received these simple gifts.

The setting sun still shone brightly in the turquoise sky, but it would not be long now before it sank down behind the Assam ranges. The clouds had rolled off the mountains and hung about like curd. As dusk fell, every spur and gully of the violet foothills stood out in clear definition; above, their snowy heads were sharply outlined against a primrose sky.

Money prizes were now presented to successful athletes, and petty cash was scattered amongst the small boys, who scrambled eagerly for coins.

When the exchequer was finally exhausted, we rode back to the ridge, and in a few minutes the playground was empty.

No account of the Durbar would be complete without some reference to " Putao Week." There was the Christmas-day shoot, for instance, in which nobody shot anything, though the beaters snared a barking deer. There was the Commissioner's dinner-party, the race-meeting, and the Deputy-Commissioner's Christmas dinner-party—" Dancing 8 to 12 p.m. Carriages at 1 a.m. R.S.V.P." And yet they say the English take their pleasures sadly !

There was bridge in the evenings. Normally, Fort Hertz does not run to a bridge four. We had two. At the Christmas party, the pipe band played outside. That reminded us of the " waits " at home. Also there were crackers with paper caps and jazz whistles inside ; if you were crafty, you extracted the goods before playing explosive tug-of-war with your neighbour. He got the invoice for them—in an epigrammatic motto. Crackers are very Christmasy. I don't know what we should have done without them. Mistletoe there was none ; and if there had been, no Druidical rites could have been performed beneath it. There were no ladies present. Nevertheless, a Decca gramophone supplied music for an impromptu dance afterwards, and several new steps were introduced.

The first autumn race-meeting was held on Boxing Day. A plot of ground had been prepared down by the river, and a course, said to be 1,000 feet long, laid down. It might easily have been made longer, but not without converting the flat-racing into another Grand National. As a

matter of fact, the racing was rather flat, though the course wasn't.

There was a totalizator—tickets a rupee each. If you won, generally speaking, you got your money back. On the other hand, if you lost, it didn't cost you any more. The natives shunned the totalizator with painful unanimity. The white man took the money; obviously, then, he would give it to his friends! A native would—and the white man isn't a fool!

The course was quite straight. Unfortunately, a curved path marred its mild agricultural aspect; and the Shan ponies, unaccustomed to cross-country riding, invariably went wide in a vast arc, slavishly taking the path. The result resembled the game called Minoru; you put your money on your favourite colour. The Shans, of course, rode bare-backed; also barelegged. There were five races, and five ponies faced the starter each time. The jockeys were quite skilful; nevertheless, some fell by the wayside.

A crowd had gathered to see the sport; but the odds were not freely laid. It is difficult to explain the mysteries of a totalizator to jungly people, and no doubt they felt they were being swindled. So the betting languished.

Ngalan La, the "Triangle" chief who had refused the Durbar invitation, had thought better of it, and came in later. Dressed in a fine brocaded Chinese gown, he marched at the head of his fifty followers to the race-course. Half-way through he got tired of the sport, and went off. He was a large man, walking with a peculiar sea-roll. His escort were a picturesque-looking lot of pirates.

Ponies were rather scarce. The same ones had to run over and over again, until they were exhausted. In order to prolong the sport, a mule race was inserted at the end. It was impromptu, and alfresco; only two mules entered. And they went through exactly the performance one would expect of mules: one started, the other remained at the post. But neither of them won, because they both went off towards China. Now, the winning-post was most conclusively in the direction of India. So the race was run again, and the mule which at the start was left a quarter of a mile behind eventually won because his rider managed to steer a course for the winning-post.

With the finish of the races, "Putao Week" closed, and in the course of the next few days the party disbanded. The Commissioner and several others turned southwards; one officer rode off to the east, and several remained at Fort Hertz. The Durbar was over.

## XIX. TO THE PLAINS

AFTER the Durbar, we dispersed to our homes. Most went south. Robinson, bowed down with Imperial cares (but bearing up remarkably well), returned to his baronial castle and damp estates at Kawnglu, there to prepare for a two months' triumphal procession through the Ahkyang Valley, of which he was the feudal lord. This would remove him from too dangerous a proximity to the end of a telegraph-wire.

The Commissioner, two officers from Sumpra Bum, and myself, followed the high road to Myitkyina; but as we could not all go at the same time, on account of the lack of accommodation in the bungalows, we split up. Sutherland and I took the road first, travelling in company; the Commissioner followed a day behind, and after him came Nicholson, of the P.W.D. Thus was the congestion relieved.

The only ones left behind were Barnard, Gatherer, Cousins, and the Deputy-Inspector-General, who was going to visit Kawnglu before returning to the hectic life of the capital. By January, after a successful season, Fort Hertz would once more sink into that Stygian obscurity which is the peculiar fate reserved for the outposts of Empire. The Deputy-Commissioner, the Commandant, and their assistants would work on, in remote oblivion, and

travel the jungle road, and meet occasionally for a chat; and, not by what they do, but by what they are, would *govern*. But we turned away, not without a sigh, for the wide plains, and the cities where men dwell, and the seaways. I was very glad to have company, at least as far as Sumpra Bum, which is about half-way to Myitkyina. Moreover, Sutherland spoke Kachin, which is the language of the road, and was attended by a small cloud of retainers—from village policemen to bootblacks—who made life comfortable for us.

We had Chinese mules to carry our kit, and there was the usual colossal delay in starting. However, we got off at last, and, as the morning mists dissolved, came out on to the open plain. It was a gorgeous day, and looking back towards Fort Hertz, beyond the sea-green *nalla*, we saw the whole horseshoe of the Lohit divide, glazed on the sapphire sky.

From Fort Hertz to Myitkyina is 214 miles, or twenty stages, if you stop at every bungalow. But no one does. Some of the stages are of reasonable length—13 or 14 miles; others are ridiculously short—8 or 9 miles only. Consequently, it is often advisable to double march, missing a bungalow; and it should never take more than a fortnight to complete the journey. The mails do it in ten days—in the dry weather. In the rains they may take a month or two.

The first few stages, while the road climbs gradually from the Shan Plain to the Kachin Hills, are in uninhabited country. Gloomy forest prevails everywhere. Tigers are alarmingly common hereabouts, and so bold are they that they sometimes

come by night and kill the mules under the very noses of the muleteers. It is absolutely necessary, when camping on the road, to keep big fires burning all night, and to tether the mules close at hand.

The first day's march is straight across the plain to the Mali kha—a dull march, for south of Fort Hertz is a laterite plain where nothing will grow but grass and sedge. Only lining the water-courses are there even bushes, until we reach the forest belt fringing the river. Once in the hills, however, the road plunges into everlasting jungle.

In the old days—I speak of six or eight years ago—one did not see the Mali kha till within 40 miles of Myitkyina. The road kept to the right bank throughout, some distance from the river, and in the course of the first four marches crossed two streams, the Nam Lang and the Nam Yak. These two streams, the Nam Lang from the west, the Nam Yak from the south, converge, and join just before the combined stream enters the Mali kha. The country between is a marsh, and the Nam Lang, at any rate; was a permanent danger, since at high water it had to be crossed by boat, always a risky affair.

To meet this difficulty, which at certain seasons almost isolated Fort Hertz, a brilliant engineer of the Indian Public Works Department, the late Mr. T. Hare, built what has since become known as the Nam Yak diversion.

Hare started operations by carrying the road from Fort Hertz in a bee-line across the plain to the banks of the Mali kha just above the Nam Lang junction. At this point the big river can be safely

crossed by boat at high water, and by temporary bamboo trestle-bridge in the 'open' season.

He then cut a road down the left bank of the Mali kha to a point below the dangerous Nam Lang confluence. Here the Mali kha contracts and enters a gorge, and the young engineer threw a permanent suspension bridge across. A hairpin bend brought the road back up the right bank, over the spur in the angle between the two rivers, and so down into the parallel valley of the Nam Yak, which, flowing conveniently from the south, is then followed for many miles.

The Nam Yak diversion, together with the new road, is Hare's monument on the North-East Frontier.

The order of our going was as follows. We arose at half-past six, while it was yet dark, dressed, and had a light meal—hot coffee and porridge. The main part of the caravan was under way soon after seven, and the mules which carried our bedding and cooking-pots and stores followed as soon as possible.

In order to be independent of the mules till we reached our halting-place for the night, Sutherland arranged for a coolie to carry our breakfast things, and a square meal each day, and, keeping in communication with the commissariat, we were able to halt at some chosen spot by a brook and have breakfast in the middle of the day.

This was an excellent arrangement. When we started about 8.30, a heavy white mist filled the valleys, and dripped noisily from the drenched trees; the air was cold and clammy, so that we were glad to walk a few miles before mounting our ponies.

By eleven o'clock the sun had broken through and dispersed the mist, or at least sent it soaring up to greater heights. By that time we were glad of a rest in the shade, and a good meal.

The road picked its way gingerly through the jig-saw of yoked spurs, descending only to cross the larger streams which flowed to the Mali kha on our left. Sometimes we looked over a cliff into the valley of the Nam Yak on our right, and saw snatches of river impounded between sheets of white gravel, with the billowy Kumon range beyond; sometimes across the valley of the Mali kha to the lofty range which separates the Mali from the 'Nmai, on our left.

For the first five days we were dependent on our own supplies. The low-lying, malarial country was entirely uninhabited, though on one occasion we met a Kachin carrying some fresh venison, and purchased a haunch. Even when a few days later, having penetrated into the hills, and ascended to more healthy levels, we came to villages, there was little enough we could buy—a fowl, maybe some fresh fish.

The scenery is nowhere impressive. There is too much jungle for that. Every valley and peak is swamped with the dull-green seas of vegetation. It is pretty in a rather insipid, spiritless way; yet after long contact with the harsh violence of the Tibetan mountains it is pleasant to gaze on these soft and supple hills, which melt away or change their shape visibly under the impact of the rain.

There were delightful peeps through the screen of trees, northwards to the snow-clad Lohit divide,

which gradually grew fainter and fainter till by the fifth day it was only an enamel painting on the porcelain sky, and at a distance of 90 miles faded from sight. We travelled southwards, ever and ever towards the tropics, till the gold crept back into the evening sky, and the lavish moonlight quenched the last glow of sunset.

On the fifth day, being 60 miles on our journey, the sun was shining in a clear sky soon after we started: not because there was no mist, but because we were sufficiently elevated above it. From the ridge we could look down into the valley, on either side, and see the trees all packed in cotton-wool.

On January 2, 1923, we reached the bungalow at Mache Ga, just over half-way to Myitkyina. Here Sutherland left me to return to his head-quarters at Sumpra Bum, visible a few miles to the east. He, however, kindly lent me one of his native policemen to supplement my rather inadequate Zarabadi cook for another four marches.

I was not long without company, however, for the very next day I reached Hpawhtum Ga, at noon, from the north, just as Captain Angelo rode in from the south; and though we had both contemplated doing a double march that day, we each relinquished that idea at the prospect of company. Angelo was on his way to take over command of the Military Police post at Sumpra Bum.

A change in the vegetation now became apparent. New trees appeared—species of Cassia and Ficus, tamarind, Areca palm, and others. A Clerodendron was in flower, and a large, coarse-leafed Strobilanthes, which I have no doubt was *S. flaccidifolius*. It

yields a blue dye, resembling indigo. Orchids are not abundant in these hills, and are certainly not a striking feature. Those which do occur are mostly of small size, with futile flowers. I collected, and brought home alive, species of Cœlogyne, Bulbophyllum, Saccolabium, Cymbidium, Dendrobium, Eria, Phaius, and Pholidota.

Not till we were past the confluence of eastern and western streams—and therefore within 20 miles of Myitkyina—did jungle flowers become common, and then they were chiefly weeds belonging to the vast tropical order Acanthaceæ. Here and there the starry-white flowers of a jasmine perfumed the air, and the tall, upright hot pokers of Phlogacanthus smouldered in the thicket. There were two species of this last, one with pinkish purple flowers, the other smaller, with dull red flowers; they also belong to the Acanthaceæ, as indeed did two out of every three plants seen in flower at this time.

I have said that in certain parts of the country tigers are so numerous as to make it unhealthy for the night-watch; but it must be confessed that, though there may be plenty of game in the 200 miles of hill jungle which separates Myitkyina from Fort Hertz, you do not see it. You cannot see 20 yards in front of you, let alone get there. Shooting in these circumstances is almost impossible. By the time you have slashed your way for a dozen yards, the entire Zoological Gardens within a radius of a mile knows that you are coming, and takes steps—or leaps—accordingly. You will be lucky if you are left with a footprint. You can hear nothing, because your ears are filled with

the noise of your own progress; but everything can hear you. The patient Kachin, with his *dah*, his trap, and his muzzle-loading gun, slays the barking deer and the tiger; but that is an incident in his life.

Sometimes coming down the road you may catch sight of a monkey looking at you—he is sure to spot you before you see him. It is part of his job. But often you may hear him—the hoot of the gibbon, the cough of the baboon, or the horrible death-rattle laugh of the langur.

But if four-legged animals are scarce, birds are many and gay. None are more curious than the huge black and white hornbills so often heard flying overhead at a great height. At the sound one cranes one's neck, and strains one's eyes, probing the heavens. Swish—swish—swish, rather a wheezy noise, like a 'plane in difficulties. It is only a pair of hornbills—they fly always in pairs; at least, I have never seen more. I had always supposed that the swishing noise was caused by the beat of the huge wings, until one day I looked up in the direction of the sound, and there was the bird *drifting* majestically across the valley on outstretched, motionless wings, swishing all the time.

Then there are the minivets—scarlet male attended by a bunch of lemon-yellow females; and a little Prussian-blue chap, flashing sparks of sapphire as he flies. Wagtails, barred black and white, like the foaming brooks over which they hover; parrots, mina birds, barbets, and many more are seen, and heard, every day now.

On January 8 I reached 'Nsop, having double

marched to some purpose, and spent a day there. The Commissioner, Nicholson, and I were due to meet the launch a few miles below the confluence, and some 15 miles above Myitkyina, on the 12th, and I did not wish to get there too early.

On the 11th I reached Chingkrang kha, and stayed at the bungalow. Soon after I had finished breakfast on the following day, the Commissioner arrived, and close on his heels came Nicholson. The latter had dropped a stage somewhere, and only reached 'Nsop on the 11th. In order to be on time at Chingkrang, he had started again at 3 a.m., and ridden the 30 miles by moonlight.

However, here we all were, and the steamer presently announcing its presence by hooting—it had tied up the previous evening, as it turned out—we trooped down to the river-side and boarded it. The mules were by this time arriving with the kit, so we were soon able to push off.

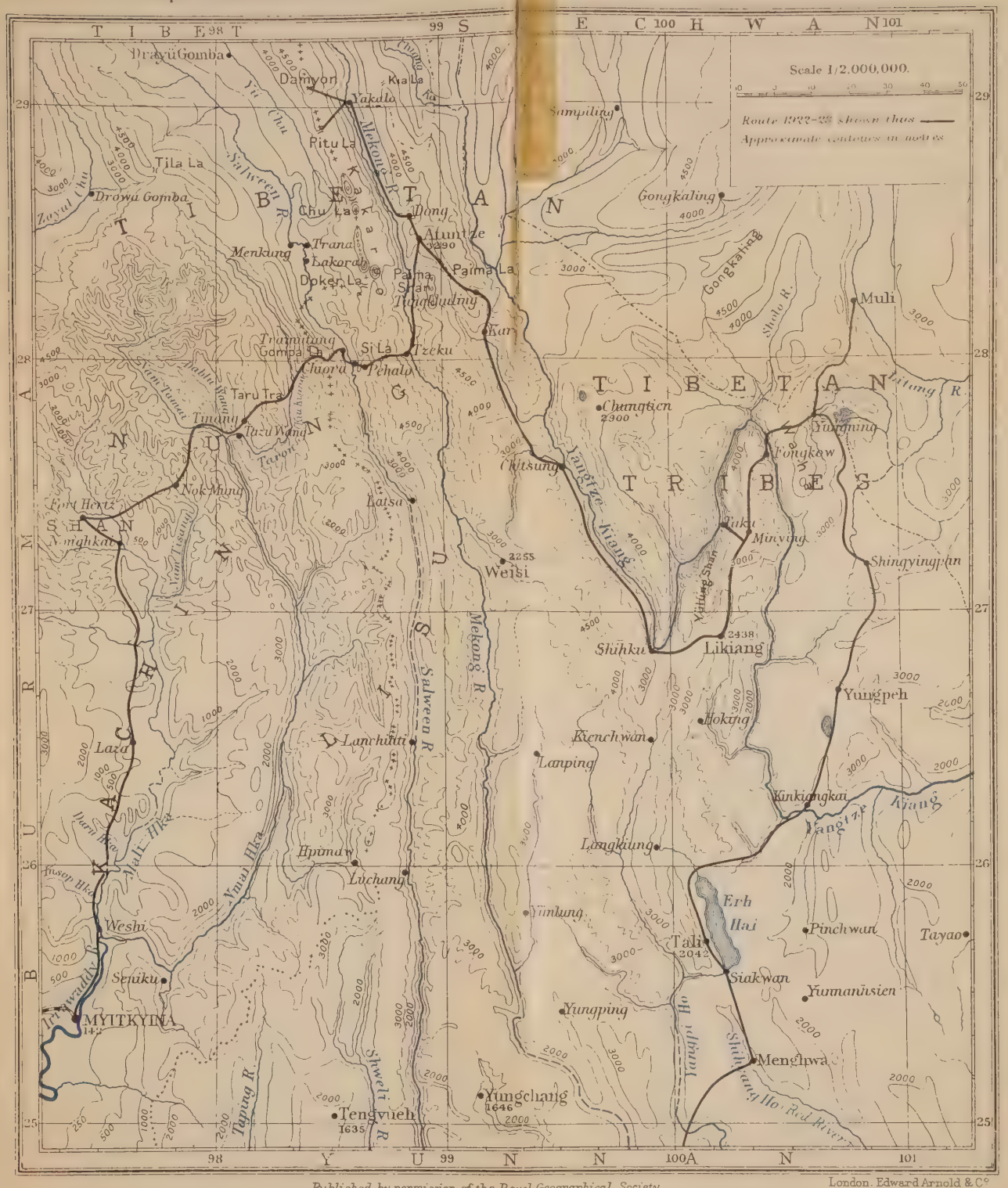
The short distance to Myitkyina was completed without incident. At one point the river is interrupted by a line of rocks, now exposed, which cause whirls and riffles : the water in the channel is swift and shallow, but we skimmed through without difficulty. A week later the water had fallen so low that the launch was unable to make her way up-stream again.

At Myitkyina the Irrawaddy was now about 400 yards wide, and the banks were a good 40 feet high. In the rains, the river fills its bed, and swells to a breadth of 800 yards. If it rises more than 40 feet—as it frequently does—the village is inundated. Indeed, there are not wanting

signs that the Irrawaddy may presently change its course altogether, and wipe Myitkyina off the map!

Towards the end of the month I left by train for Rangoon, and early in February boarded the steamer for home.

Map to illustrate "FROM CHINA TO HKAMTI LONG" BY F. KINGDON WARD.

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